INDIRECT COST OF UNIVERSITY RESEARCH

HEARINGS

BEFORE THE

SUBCOMMITTEE ON SCIENCE

OF THE

COMMITTEE ON
SCIENCE, SPACE, AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

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INDIRECT COST OF UNIVERSITY RESEARCH

TUESDAY, APRIL 23, 1991

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
SUBCOMMITTEE ON SCIENCE,
Washington, D.C.

The subcommittee met, pursuant to call, at 9:42 a.m., in room 2318, Rayburn House Office Building, Hon. Rick Boucher [chairman of the subcommittee] presiding.

Mr. BOUCHER. The subcommittee will come to order.

This week, the Science Subcommittee begins a series of hearings on indirect costs of university research. The subcommittee intends to pursue legislative and administrative changes to the present system which will ensure more precise standards for allowable costs, increased accountability at universities, and improved agency oversight.

The subject of indirect, or overhead, costs has been highly publicized. Recent Energy and Commerce Committee investigations of Stanford University's indirect costs revealed a number of items that were improperly charged for which Federal research funding were received. Federal funds defrayed a part of the depreciation costs of athletic equipment and a luxury yacht, as well as part of the salaries and administrative expenses for a shopping center which was owned by the university. The Government's share of those items came to $369,000. The investigation of the Energy and Commerce Committee is now focusing on the practices of other universities.

But these investigations are only the highly visible tip of an iceberg of muddled university accounting, ambiguous Government regulation, and inadequate Federal oversight. The Office of Management and Budget sets the regulatory framework for the indirect cost system through a number of circulars. Circular A-21, the most important of these, was first promulgated more than 30 years ago and has only been modified eight times since, most recently in 1986. It is outdated; it is vague; it invites misunderstanding and misinterpretation. Amendments disallowing certain defense overhead costs, for example, were enacted by the Congress in 1985 but have yet to be incorporated in Circular A-21. Numerous university recommendations for amendments to the circular have been ignored.

These facts suggest that OMB's activities in regulating the indirect cost recovery system have been characterized by inattention and are largely responsible for the misinterpretation and confusion about what costs are properly allowable.

We understand that OMB has convened a task force for a look at the indirect cost issue, and late yesterday the director of the Office announced initial modifications to Circular A-21 which appear to have taken into account the Congressional directions contained in the 1985 legislation. The subcommittee will, in due course, review the appropriateness of the changes announced by OMB in its press release yesterday.

I might add that this subcommittee invited OMB to appear this morning and testify with respect to its view on problems that exist within this system and modifications that the Office intends. I am very disappointed that OMB has chosen not to appear. Its further absence—or its absence today further reflects the lack of priority which OMB has assigned to this matter, and I very much hope that its absence does not reflect an unwillingness to work with the Congress in the effort to bring about reform.

Within the regulatory framework that is outlined by OMB, two agencies—the Office of Naval Research and the Department of Health and Human Services—set indirect cost rates for nearly all universities and are charged with overseeing university claims for reimbursement. The Energy and Commerce Committee has pointed to a pattern of less than rigorous oversight by both of these agencies. We realize that there are competing demands for the auditing resources that are available to both agencies, but better performance will be expected in the future, and this subcommittee will inquire into methods to ensure financial accountability at universities through adequate oversight.

Public confidence in university accountability has undoubtedly been stressed as a consequence of recent events. A strong system of academic-based research has served the national interest for the past 40 years, and it is this subcommittee's intent to keep that system strong. But universities also must recognize that public funds bring with them a duty to use the money wisely and for its intended purposes. Universities bear primary responsibility for the appropriate use of Federal research funds entrusted to them. The public has every right to demand a full accounting of university stewardship.

Last year, indirect costs amounted to about $2.5 billion. That is about the same sum as requested by the administration for fiscal year 1992 for the National Science Foundation. Indirect costs account for nearly one-third of the total cost of research grants to universities and have risen continually both in the actual amount and as a percentage of total research funding over most of the history of Federally sponsored research. Controlling the growth of these costs and ensuring that they legitimately support research must be a priority both for the Congress and for the administration.

Today, we will hear from the agencies that set the indirect cost rates and conduct the oversight for universities. We have also asked two research funding agencies—the National Science Foundation and the Department of Agriculture—to tell us how indirect costs affect their funding decisions. On Thursday, we will hear from non-Government witnesses who have studied the system and made recommendations for its improvement and from university administrators and from faculty.

During these hearings, the subcommittee will first gain a comprehensive understanding of the current system for indirect cost recovery, and we will then proceed to question how these costs should be handled in the future. In particular, our questions will include whether the current method of indirect cost allocation and recovery should be scrapped in favor of a simplified approach, such as a uniform indirect cost rate that would be applied to all universities or perhaps the making of direct research grants to principal investigators without regard to overhead costs.

We will also ask whether regulations for cost recovery should be set by the Office of Management and Budget or by some other agency, and we will ask what refinements and improvements are necessary to make the system function more effectively.

That concludes the chair's opening statement. The chair now recognizes the ranking Republican member of the subcommittee, the gentleman from California, Mr. Packard.

Mr. PACKARD. Thank you, Mr. Chairman.

I would like to join with you in welcoming our very distinguished witnesses who have come to testify before us today. I certainly look forward to hearing from all of the panels on this very timely issue. The incident at Stanford University sparked our interest in this area, and it is time for us to review whether the costs that are being assigned to overhead are appropriate and relevant to the research effort.

These two hearings today and Thursday will give us the chance to explore why the indirect cost component of Federally supported research has risen continually since the inception of the Federal support. Indirect cost principles are covered by OMB Circular A-21. However, circulation of indirect costs, or, rather, calculation of indirect costs varies greatly from university to university. This makes comparing indirect cost rates or actual expenses virtually impossible.

From these hearings, we should be able to determine what indirect costs are appropriate, what level of accountability universities should be held to, and what extent of Federal oversight is needed. This subcommittee may also look into developing a more uniform system for calculating indirect costs and devising caps for the maximum amount allowable for indirect costs.

Scientific research is essential from both the standpoint of expanding knowledge and increasing this country's competitive stance. Nonetheless, universities must be held accountable for the Federal support that they receive. Indirect cost reimbursements have to be thoroughly examined to ensure that they are truly components of supporting research and, thus, that public funds are being properly used.

Mr. Chairman, I do thank you for scheduling these two days of hearings and look forward to a productive session.

Thank you.

Mr. BOUCHER. The chair thanks the gentleman and recognizes the gentleman from Oregon, Mr. Kopetski.

Mr. KOPETSKI. I have no opening statement. Thank you, Mr. Chairman.

Mr. BOUCHER. The chair recognizes the gentleman from New York, Mr. Boehlert.

Mr. BOEHLERT. Thank you, Mr. Chairman.

I shouldn't want you to think that OMB's failure to have a representative here today indicates on the part of OMB a lack of cooperation from the Administration. I fully expect the Administration to be most cooperative. I would suggest to you that OMB is probably busily engaged right now in looking at the indirect cost of White House staff travel.

Let me report to you, Mr. Chairman, that I just returned from beautiful upstate New York and I checked Cayuga Lake, and there were no yachts on the lake, but the people are concerned about this issue, and I was surprised yesterday. I addressed a Chamber of Commerce meeting in Ithaca, New York, and one of the questions that was posed to me dealt with this subject, and the questioner was expressing some concern that money is maybe not be used for its intended purpose, and I assured him that we were looking very carefully at the question. And we have got a distinguished panel of witnesses today; Dr. Schmitt is one of the best, and I am glad to see him back here. But I want you to know I told the questioner that, last time I checked, all was well at Cornell, but I don't know about the rest of the country.

But, Dr. Schmitt, this is a subject that has been of concern to you for a number of years, and you have got a unique perspective, and I look forward to your testimony.

Mr. Chairman, I want to applaud you for having this hearing. I think it is a very important subject.

Thank you.

Mr. BOUCHER. The chair thanks the gentleman and recognizes the gentleman from Illinois, Mr. Fawell.

Mr. FAWELL. Thank you, Mr. Chairman.

I, too, applaud you for looking into this matter; it is troublesome. I have town hall meetings coming up this weekend, and it is bound to be a matter that will bring about some questions.

Some reports have indicated that the university administrators and Government officials feel that most of the blame could be traced to liberal interpretations of vague Federal guidelines and the lax auditing by Federal agencies and by independent auditing concerns that paid little attention to research costs.

But say what you will about the good intentions of academia, most simple souls know very well that Government R&D money should not be spent on yachts or grand pianos or for a going-away party for the dean, and that can be a very unfair thing to say because, of course, the vast majority—99 percent perhaps—of the problem is not as apparent as are the examples to which I just made reference.

But we all, I think, do need explanations. If this were the Pentagon, I suppose we would be looking at it in another way, if it were back home with some of our local governments, but it is a little bit of a shock when you feel that our major academic institutions are so oblivious that they can authorize these kinds of expenditures, the sensational ones, which—I suppose that always catches our attention.

So, I for one and I know many others, of course, are very interested in hearing the testimony in regard to just what is indirect

spending, and I thank again the chairman for bringing this to our attention.

[The prepared statements of Messrs. Bruce and Costello follow:]

OPENING REMARKS
THE HONORABLE TERRY L. BRUCE
SUBCOMMITTEE ON SCIENCE
APRIL 23, 1991

THANK YOU, MR. CHAIRMAN. I WANT TO COMMEND OUR CHAIRMAN FOR TAKING UP THE ISSUE OF UNIVERSITY INDIRECT COSTS ON SUCH A TIMELY MANNER.

THE PROBLEM WE FACE IN THIS COMMITTEE AND IN THIS CONGRESS, IS PROTECTING THAT PORTION OF THE TAXPAYERS' MONEY BEING GIVEN TO OUR UNIVERSITIES WHILE AT THE SAME TIME PROTECTING AND ENSURING THE INTEGRITY OF OUR RESEARCH UNIVERSITIES. WE NEED TO CLARIFY THE DEFINITION OF ALLOWABLE EXPENSES AS WELL AS RE-VAMP THE AUDITING PROCESS IN ORDER TO MAKE CERTAIN THAT BOTH THE UNIVERSITIES AND THE GOVERNMENT UNDERSTAND THEIR ROLE IN EFFICIENTLY CARRYING OUT THIS NATION'S GOVERNMENT-FUNDED RESEARCH.

I LOOK FORWARD TO THE DIFFERING VIEWPOINTS OF EACH OF OUR WITNESSES, AND ANY POSSIBLE ANSWERS THEY MAY HAVE TO SUCH QUESTIONS.

THANK YOU, MR. CHAIRMAN.

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SUBCOMMITTEE ON SCIENCE

INDIRECT COST OF UNIVERSITY RESEARCH HEARING

APRIL 23, 1991

Mr. Chairman, today and Thursday we will hold Hearing on the Indirect Cost of University Research. I want to thank you for calling this important and timely hearing.

Just last month we heard about the investigation of inappropriate overhead cost charges by Stanford University and other institutions around the country. With more than 50 universities in the process of undertaking systematic audits, it is important that we review the problems, determine causes, and develop a basis for recommending legislative and administrative changes in how indirect cost rates are determined and what level of Federal oversight is necessary.

Again, Mr. Chairman, I want to thank you for calling this important hearing. I look forward to some relevant testimony.

Mr. BOUCHER. The chair thanks the gentleman and welcomes now our first witness of the morning, Dr. Roland Schmitt, the president of Rensselaer Polytechnic Institute, who is no stranger to this subcommittee, having testified here on a number of previous occasions.

Dr. Schmitt, we welcome you this morning. Without objection, your prepared statement will be made a part of the record, and we would appreciate your oral summary of your view of the indirect cost system from the position of a president of a major research university and any recommendations that you may have for how that system can be improved.

STATEMENT OF ROLAND W. SCHMITT, PRESIDENT, RENSSELAER POLYTECHNIC INSTITUTE, TROY, NEW YORK, ACCOMPANIED BY VIRGINIA GREGG, COMPTROLLER

Dr. SCHMITT. Thank you, Mr. Chairman. I really appreciate your allowing me to speak at this hearing this morning.

You will find a much more detailed description of my views in the written testimony, which I think you have.

To shed light on these complex issues about Federal funding for academic research, I want to present the experience of one university—namely, my own. Rensselaer is a strong research university, but it is neither too big nor too complex to be able to understand it. In addition, our situation is quite normal and may be more typical of the general academic scene than some of the instances receiving media attention. We have no memos of understanding beyond OMB Circular A-21, and our overhead rate is about 59 percent, mid-range among research universities.

Before going on, though, I want to give you a little background on my own perspective. Before coming to Rensselaer three years ago, I spent 37 years in industry, retiring from GE as senior vice president of science and technology in 1988. I managed R&D, overseeing the transfer of forefront science and technology to commercial products at a laboratory that was famous for doing just that.

The reason for mentioning this is that during that career—and I am on record during that career long before I knew I was going into academia; I came to appreciate the U.S. academic system as one of the world's best, especially at exploring leading edge science and engineering and at educating engineers and scientists and being of inestimable value to me when I was in industry.

But let me first of all summarize some of the relevant convictions that I have come to in looking at this whole situation. First of all, I believe we should keep in mind that universities need research for two reasons at least, both because it generates knowledge, which our country needs, but also because research enhances the education of students, both graduate and undergraduate.

The second statement I would like to make is that university research makes no money. We subsidize it from gifts and endowment, just as we subsidize instruction.

Third, the overhead rate on nonresearch activities, at least at my institution, is somewhat higher than it is on research, and that is at what I believe is a rather frugal institution.

Beyond the recently publicized aberrations in overhead charges, which we have all read about again and again and which must indeed be fixed quickly, there still remain some difficult, substantive issues in setting fair overhead rates.

There are, first of all, very tough issues in classifying and distributing legitimate, allowable costs that must be resolved with policies that reflect clear understanding of the missions and goals of the activities under consideration.

Now even with the best rules written, there are always going to be gray areas; it is a very complex scene that you are dealing with because of the real complexities in both university operations and in accounting rules.

Now if universities bias gray decisions—that is, decisions in the gray areas—in their own favor, as people are prone to do, and if there are insufficient compliance audits—combining those two things, making choices in the gray areas in your own favor and the absence of compliance audits—there will most likely be a drift of the system toward unacceptable aberrations, and this may be the phenomenon that has been occurring in some of the instances noted.

I believe that OMB Circular A-21, modified perhaps but, more importantly, augmented by OMB Circular A-133, which will require compliance audits, that these two things can be an excellent basis and guide for governing the overhead process in academic institutions if it is applied in a way that reflects both the true value of university research and the legitimate differences among various research universities.

So I would urge this committee, as it has already said it will do, to begin the considerations by its understanding of the mission of academic research, and, to repeat, there are at least three; one is to contribute valuable knowledge to our society, second is to educate graduate students, and the third is to enrich undergraduate education, and all three of these functions are important. The Federal Government has a vital interest in each of them, even though the balance of interests may vary agency by agency.

Now let me go to the particulars of Rensselaer to try to illuminate the issues. For the fiscal year 1990, Rensselaer's research expenditures approximated $48 million while our income for research was $41 million. Funding comes from Government, industry, and private gifts.

Now you should put this view of research into the context of total revenues, and, with your permission, I will ask Mrs. Virginia Gregg, my comptroller, to put some slides up, Mr. Chairman.

Mr. BOUCHER. All right. We will be happy to view those. I don't know whether someone on the staff can control the lights in the back.

Dr. SCHMITT. There are figures in the written text, but for the benefit of everyone I thought we would show them.

If the lights can be controlled, it would be nice, but I think you can see it.

[Charts shown.]

Figure one shows our total operational flows for 1990—perhaps we don't need quite all of them off; we don't want to put the audience to sleep.

Mr. BOUCHER. Can you read your notes?

Dr. SCHMITT. It is better now. Thank you.

Now at most independent colleges and universities, including Rensselaer, tuition is the main source of revenue, and if you will look in the upper left there, tuition is the biggest source of revenue. Research contracts, grants, and gifts account for slightly more than 30 percent of our total. That is the second element down on the left side there. And gifts, endowment income, and a few miscellaneous sources of income bring in the rest of the revenues—the lowest part on the left.

On the expense side, on the right of the ledger, educational costs exceed research expenditures by quite a significant amount, as you can see from that column on the right.

Now, of the $24 million of income that Rensselaer has from sources other than tuition and research, for that $24 million, we use $17 million of our own funds to subsidize education and $7 million to subsidize research. This means that neither students nor research sponsors bear the full cost of the endeavors they underwrite.

Now at Rensselaer, the indirect costs allocated to educational activities, as I said, are a somewhat higher proportion of the direct costs than they are for research activities, and that shouldn't be surprising, because all of the costs of, for example, fund-raising, which are very important to private universities, athletics, minority programs, student programs, all of these are attributed to education. None of these activities is allowable as research overhead costs, and yet each is vital to an academic institution.

Rensselaer's self-support for research, which I said is $7 million, is consistent with other universities' experience around the Nation. Some 18 percent of the total research funding done at American universities is provided by the universities themselves nationwide, and I would point out to you that the rate of growth of this self-support of research by universities themselves has been at a faster rate during the 1980's—namely, about 14 percent a year—than has been the growth of Federal support, which has been about 10 percent a year.

Rensselaer and other universities will be hard pressed, I would tell you, to continue this leveraging of sponsors' dollars with institutional support because the budget pressures on all of the universities in this country, private and public alike, are increasing greatly and with rapid intensity.

The revenues and expenses of research are shown in figure two, the next figure that Mrs. Gregg will put up. Less than half of Rensselaer's research funding comes from the Federal Government; it is the upper part of that left-hand bar. We have only 46 percent of our research income from the Federal Government.

If you go to the expense side, on the right, approximately 72 percent of resources are employed directly in the research effort. That is all of the sections on the right except the bottom-most one, which is labeled "Overhead." Seventy-two percent of the resources are employed directly in the research effort for faculty and research salaries, student research assistance, equipment, supplies. The remaining 28 percent is for expenses that are not easily attrib-

utable to a particular project—that is, the overhead costs, the central focus of this hearing.

In case you are puzzled by that 28 percent of research expenditures going toward overhead while we said that our nominal rate is 59 percent, the explanation is that in the computation of the nominal overhead rate you use only part of the direct costs as the denominator in computing it, so that that makes the nominal rate higher than the proportion of the total dollars spent.

Now the committee has asked me for an explanation of how the indirect cost process works at a university, and I have given a fairly complete description of that process in appendix A of my written testimony. I do not want to repeat that entire appendix, Mr. Chairman, because it is quite extensive. The only thing I can tell you is that I decided to write it myself, (a) to make sure that I understood it, and (b) to hopefully write it in a way that others who were as much of a novice as I am could also understand it, and I hope it fulfills that function.

But, in a nutshell, let me say what the process is. First of all, we record each item of cost and note whether it is allowable by Government standards. Second, we assign each item of cost to one of several indirect or direct cost pools. Third, we allocate all of the indirect cost pools through a fairly complex cascading series of distributions to various institutional activities. Fourth, we calculate an overall overhead rate for sponsored research by dividing these indirect costs allocated to all the sponsored research by the specified direct costs, which are mainly compensation plus materials. And, finally, having computed the overhead rate in that way, we apply this sponsored research overhead to each one of the individually sponsored projects that occur. And I understand, Mr. Chairman, that you had asked for a description of how these bills are actually collected.

Well, when we have accumulated expenses on any one of the sponsored research projects, we send a bill, by either mail or by electronic transmission, to the particular agency—so to NSF, ONR, wherever it is. This bill consists of a Government voucher, a Government form, filled out by us with details of the type of charges that are included in the bill. The agency processes it in a manner that I don't know, but I presume the agencies can describe that to you, and, finally, if they approve the voucher, they either mail the check to us physically and we deposit it, or, as is becoming more frequent these days, they make an electronic funds transfer. So that is the end game, if you like, of this entire process, how it is done.

Let me go on to the next figure, which shows the distribution of our overhead costs. Approximately half of the indirect costs relate to capital components—to maintenance, to upkeep, utilization of research facilities, things of that sort. The other major components are university administration and a little bit for library costs.

Rensselaer has worked diligently to comply with overhead allocation regulations, and we have also slashed our overhead costs, especially in administration. In fact, the overhead rate that we have submitted to the Department of Health and Human Services for approval for the next round is lower than the three-year predeter-

mined rate approved in 1988, and it follows a trend of lower overhead rates at Rensselaer since 1984.

We have cut overhead by eliminating management layers in some of our organizations, by reducing the head count in nonstrategic activities—you will find that waste baskets aren't being emptied quite as often or floors swept quite as often as they used to be—streamlining academic support units, and contracting out some activities, such as printing services.

Now it is perhaps true that an item-by-item audit would still reveal some costs allocated to research that could be questioned as well, I might say, as costs that were overlooked. I am confident that such instances on our campus would arise from either human error or legitimate differences of opinion, which brings me back to the importance of OMB Circular A-133, which was issued in, I think, March of 1990, and which will require regular outside compliance audits. Such regular compliance audits, which have not generally been carried out in the past, are important, in my view, for at least two reasons: first of all, to correct mistakes, but second, and I think equally important, to force the needed communication between sponsors and performers.

OMB Circular A-21 explicitly says—and I quote—"The successful application of these cost accounting principles requires development of mutual understanding between representatives of universities and of the Federal Government as to their scope, implementation, and interpretation." There is no way that one can ever write any document which will cover every conceivable complexity of accounting principles. Therefore, the compliance audits required by A-133 will foster the kind of ongoing discussions that are needed to assure that mutual understanding called for by A-21.

Now, Rensselaer, working with our cognizant audit agency, has moved forward on a number of strategies that have been recommended, including multi-year predetermined overhead rates, more realistic recognition of the utilization of equipment and facilities via specific depreciation schedules, and active involvement. I have to tell you, of the interested faculty in financial matters on our campus. We also support other initiatives, such as the Federal demonstration project, which may cut costs and increase the amount of funds available for research.

So, in summary, let me highlight a few key issues related to university research. University research, as the chairman and members of this committee have said, has been crucial to U.S. economic vitality, and its importance will grow. The university infrastructure, essential for conducting first-class research, has deteriorated significantly, and I think there is evidence that has accumulated in several studies of that fact. If isolated abuses lead to funding cuts for legitimate expenses, then the quality of that research will, of course, suffer.

I believe that many universities today are trying to improve administrative effectiveness. We have no choice. As you may have been reading, the cost pressures on universities, whether they are private or State, have been mounting intensely over the past two years. So the cost pressures on campuses all over the Nation today are compelling the university administrators to try to improve administrative effectiveness and reduce costs.

Universities must control costs, particularly administrative, to ensure that resources entrusted to us are well spent, as you have called for. In fact, I agree with some remarks of Congressman Howard Wolpe that I read recently and where he said—and, if I may, I would like to quote him. He says, "I hope that increased Congressional oversight of Federal science programs will lead to two results: first, increased efforts by the science community to police itself by engaging in constructive self-critique; and, second, a realization that increased Congressional scrutiny will ultimately lead to stronger Federal science programs."

I believe that the scales of public confidence can be tipped against us easily, as is evidenced by some of the anecdotes that you tell about instances in your own district, and I think that is alarming. Our economic research system must be preserved and strengthened, the academic community must vigorously and quickly correct any aberrations in it system of accountability, and this committee and Congress can also help us find constructive paths to achieve that goal.

Mr. Chairman, I would like to offer one last thought. I would like to invite any committee member or staff person to visit my university, Rensselaer, to see first-hand the kind of exciting forefront research we do that is highly relevant to the economic and social welfare of our Nation, and I am confident that if you will look at our campus you will see that you are, indeed, getting a good bang for the buck.

Thank you.

[The prepared statement of Dr. Schmitt follows:]

Academic Research and Development- Its Functions, Costs, and Liquidation

Roland W. Schmitt
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Testimony before the Subcommittee on Science of the Committee on Science, Space and Technology of the U.S. House of Representatives
April 23, 1991

Introduction

May I begin by thanking you for allowing me to appear at this hearing today. It is my hope that many of the complex issues facing Congress and the Federal Government about academic R&D might be better understood by looking at a concrete example. The advantage of looking at my university, Rensselaer, is that it is a strong research university and yet it is not too large or too complex to be understood. Moreover, our situation is a very normal one, no memos of understanding beyond OMB Circular A-21 and an overhead rate of 59%, mid-range among research universities. Thus, I hope to contribute to these hearings by giving you illustrations of the issues facing the Federal Government in its desire to maintain a strong academic research system in the U.S. and yet being sure that the taxpayers' money is being well spent.

You should first know about my own perspective. I have been a university president for only three years. Prior to that I spent 37 years in industry, retiring from GE as Senior Vice President of Science and Technology in 1988. My career in industry was spent in managing large R&D organizations that had the responsibility of transforming forefront science and technology into commercial products; the laboratory that I led has been one of the more successful ones in the world in doing just that. During my industrial career, I came to be highly

appreciative of the strength and value of the U.S. academic research system. It is unique in the world in combining both the exploration of the frontiers of science and engineering and in educating and training advanced students, especially at the doctoral level. The benefits of this system to industry are enormous, in both the new ideas that are drawn from academic research and the talented young men and women produced by the system who go into U.S. industrial laboratories and plants.

I am not prepared to assure you that Rensselaer's experience with federally sponsored research is prototypical of U.S. academic institutions generally, but I suspect it is not significantly different from the norm. Based on my experience during the last three years, I suggest that the following conclusions, which I shall attempt to elaborate in the body of my testimony, are highly relevant to the deliberations of this committee:

•Research is vital to the university not only because of the knowledge it generates but because of the contribution it makes to education.

•Research is not a money making activity - it is subsidized by gifts and endowment income just as education is.

•The overhead rate on non-research activities is higher than it is on research; research is not an activity being inordinately loaded with as much of a university's costs as it can stand.

•Beyond the highly publicized aberrations of the research overhead system which must be corrected fast and effectively, there are still difficult, substantive issues in determining fair overhead rates.

•Even with clear policies and goals, gray areas will persist because of real complexities in both university operations and in accounting rules. If universities always bias the "gray decisions" in their own favor and if there are inadequate compliance audits then there will be a drift of the system toward unacceptable aberrations. This may be the phenomenon that has occurred.

•The important, basic, tough issues are the decisions that must be made about legitimate, allowable costs: how to classify them, how to distribute them. These are classic and inescapable issues in any system of cost accounting. The answers are not immutable; they need to be driven by policies based on a clear understanding of the missions and goals of the activities under consideration.

•OMB Circular A-21, augmented by A-133, can be an excellent basis and guide for governing the overhead process in academic institutions provided it is applied in the context of the remarks above. Because various research universities differ greatly from one another--private vs. public, urban vs. rural, comprehensive vs. focused, northern vs. southern climates, etc.--a degree of flexibility needs to be built into the governing documents and their implementation.

Thus, I believe that the deliberations of this Committee should begin with a consideration of the mission and goal of academic research. I suggest that there are three:

•to contribute to knowledge of value to our society,

•to educate graduate students by advanced, specialized courses and research apprenticeships,

•to enrich the education of undergraduate students with teaching by faculty in touch with advancing knowledge.

As we get enmeshed in details of costs and funding, we should keep these basic functions in mind. The Federal Government has a primary interest in fulfilling each of these though the balance of interests may vary from agency to agency. It is the confluence of these three functions in American higher education along with the linkage of academic research to industry and government that makes the U.S. system so unique and so powerful.

Background Information on Rensselaer

Rensselaer Polytechnic Institute, founded in 1824 and located in Troy, New York, is an independent, co-educational university well known for the outstanding quality of its engineering and technology programs and the excellence of its students, who are consistently among the most talented science and mathematics students in the country. It has an undergraduate student body of approximately 4300 and a full-time graduate population of approximately 1600, more than 25% of our student population. While retaining its fundamental mission of undergraduate education, Rensselaer has significantly expanded its research activity in recent years. For fiscal year 1990, Rensselaer's total research volume approximated $48 million and we expect that to grow by over 10% again this year. Today, many faculty perform individually directed research. There are approximately a dozen major research centers on campus, plus many smaller ones that bring together faculty and student researchers with industry and government sponsors in ongoing and special projects.

University Revenues and Expenses

Before delving into the complex issues of research funding and overhead, let me give you an overview of a university's revenues and expenses; it will be helpful as a perspective and a context for the issues that surround research funding.

Figure 1 shows our total operational flows for 1990. At Rensselaer, tuition is the largest component of our revenues, as is the case at most independent colleges and universities. Research contracts, grants and gifts are nevertheless an important and growing component - accounting for slightly more than 30% of total resources. Gifts and endowment income account for most remaining revenue. [Auxiliary income, consisting primarily of student room and board, are roughly equal to expenses at most universities and have been excluded.]

On the expense side of the ledger, educational costs exceed research expenditures. In this comparison of revenues and expenditures, please note that both education and research are subsidized. Of Rensselaer's $24 million of income from sources other than tuition and research, $17 million is used to subsidize education and $7 million to subsidize research. Despite the apparent high price of education and research at a modern technological university, parents and research sponsors do not pay the full cost of the respective endeavors which they underwrite. Both are subsidized by private benefactions - past and present - in the form of endowment and gift income (and at public universities, by state appropriations). If university accounting were as state-of-the-art as our research, the subsidy shown would actually be even larger -- primarily because the wear and tear on our physical infrastructure is not fully reflected in university operating statements. Universities also support faculty research costs during the academic year.

At Rensselaer, the indirect costs allocated to educational activities are a higher proportion of the direct costs than they are for research activities. This shouldn't be surprising. All of the costs associated with fund raising, athletic activities, minority programs, and student programs are attributed to instruction. None of these activities are allowable as research overhead costs and yet they are vital to the life of a university. But note that if, say, athletic activities were considered a primary mission of the institution, then these costs would immediately be classified as direct costs for that function thus changing the calculus of overhead computations. This is a simple illustration of the statement above that "the answers are not immutable; they (are) driven by policies based on a clear understanding of the missions and goals of the activities under consideration."

University Research and Overhead Issues

Let me now focus on the target of this Committee's interest, the revenues and expenses of research. Figures 2 and 2A show

the revenues and expenses of research at Rensselaer. Support for research is provided by federal and state sponsors, private industry, and by the university itself. While Rensselaer has benefited more than most other universities in the support received from the corporate community, it is not alone in funding research from its own resources. Approximately 18% of total research funding is provided by universities themselves, nationwide. It is also important to note that the rate of growth of support by academic institutions of their own research (~14%/year) has been greater during the 80's than the rate of growth of federal support (~10%/year). At Rensselaer and other major universities, taxpayer dollars are being leveraged with institutional and private support.

Let me add that our ability to continue this support is highly problematic in light of the tremendous budget pressures facing independent and public universities. Universities and sponsoring agencies must establish a modus vivendi that ensures the continued health and vitality of our enterprise.

The key question – "Where does all the research funding entrusted to universities go?" – is certainly creating a stir of late, and I am certain is on the minds of all distinguished members here. Figure 3 shows a breakdown of the research expenditures at Rensselaer. Approximately 72% of resources are employed directly in the research effort -- for faculty and research salaries; student research assistance; equipment; and supplies. The remaining 28% is for expenses and infrastructure necessary and essential in conducting research, but not easily attributable to a particular project.

You may be puzzled that only 28% of our research expenditures go toward overhead in light of some of the high overhead rates that you've heard about, ranging up to 88%. In fact, the approved overhead rate for Rensselaer for the current year is 59.1%. These rates are computed as the ratio of overhead costs to only a part of the total direct costs, namely compensation

and materials. In academic research a lot of the direct charges are for the purchase of equipment and these are omitted from the computation of rates.

The committee has asked for an explanation of how the indirect cost process works at a university. In Appendix A of this testimony, I have given you a description of the process that I wrote, which is simple enough for a layman like myself to understand and yet I am assured by Rensselaer's controller that it is also accurate. I hope it will prove useful to the Committee. In brief the process involves the following steps:

1. Recording each item of cost and noting whether or not it is allowable by government standards.

2. Assigning each item of cost to one of several indirect or direct cost pools.

3. Allocating all of the indirect cost pools, through a cascading series of distributions, to various institutional activities.

4. Calculating an overhead rate for sponsored research by dividing the indirect costs allocated to sponsored research by the direct costs of compensation plus materials.

5. Applying this sponsored research overhead to each individual sponsored project.

Figure 4 shows the major components of Rensselaer's indirect costs for sponsored research. Approximately half of indirect costs relate to the capital components – maintenance, upkeep, and utilization of research facilities. The other major components are university administration and library costs. Included in administration is an allocation of a percentage of university administrative salaries, including a fraction of my own.

Rensselaer has worked diligently, as I am confident other universities have, to comply with the regulations concerning overhead allocation. We have also worked vigorously to reduce overhead costs, particularly within the administrative component which so concerns sponsors, faculty and many university administrators and trustees.

I am pleased to report that the overhead rate we have submitted to the Department of Health and Human Services for approval is lower than the three year predetermined rate approved in 1988, and follows a trend of lower overhead rates at Rensselaer since 1984. In fact, the overhead has declined from approximately 33% of sponsored research dollars in 1985 to 27% as proposed for 1992 – a decline of nearly 20%. During this period, the administrative component of overhead has also declined. In 1988, for example, administrative costs comprised 15.8% of total research and this is going down to 12.5% in the 1992 submittal. This has been accomplished through a steady, consistent, and continuing effort at improving staff productivity, eliminating non-essential functions, and sourcing out tasks that we believe can be more effectively performed by commercial firms. Some of the specific areas include: 1). eliminating layers of management (which not only reduces cost but makes an organization more responsive); 2). reducing headcount in non-strategic activities such as grounds maintenance; 3). streamlining academic support units; and 4). contracting out university printing activities.

I am not going to tell you that there are absolutely no costs at Rensselaer allocated to the research effort that would not be questioned under a comprehensive, detailed, item-by-item audit. But I can assure you that any items questioned would be either legitimate differences of opinion or inadvertent errors, not a deliberate "testing of the limits". Any university president who would give you greater assurance is either naive or is spending too much overhead for a gaggle of accountants. Our overhead

submissions have been rigorously, but fairly, scrutinized by our cognizant agency, DHHS. A review by the accounting staff at Rensselaer gives me comfort that the rate we have submitted for fiscal 1992 is conservative, fair and appropriate.

The issues surrounding research overhead – methodology, cap limitations, compliance costs, etc. – continue to be actively discussed by universities and responsible government agencies. You will be hearing a number of these recommendations from others who have more detailed technical knowledge than I. Rensselaer, working with our cognizant audit agency, has moved forward on a number of these recommended strategies, including multi-year predetermined overhead rates; more realistic recognition of the utilization of equipment and facilities via specific depreciation schedules; and active involvement of interested faculty in financial matters. We believe that the implementation of Circular A-133, which requires a university to have performed a rigorous audit of sponsored research on a continuing basis, while expensive, will do much to allay misperceptions of a lack of accountability. We are also supportive of other wide-ranging initiatives such as the Federal Demonstration Project, which hold promise of reducing costs and increasing the amount of funds available for productive research.

Summary

In summary, important issues relating to university research include the following:

•University research, in partnership with federal and state government and industry, has been a critical factor in the economic growth and vitality of the United States, and will play an increasingly important role in the more competitive world of the future if managed prudently and responsibly.

•The university infrastructure essential for conducting first class, state-of-the-art research has deteriorated significantly over

the past ten years. If isolated instances of abuse or neglect result in a reduction of funding for legitimate expenses – be they direct or indirect – then a serious, significant deterioration in the quality of research conducted in U.S. universities will result.

•There are significant efforts under way at many universities to improve administrative effectiveness . The cost pressures on higher education are coming from several directions and in my opinion are going to continue to be severe for years to come.

•Universities must make every effort to rigorously control all costs, particularly on the administrative side, in order to ensure that resources entrusted to us are used productively and with the full confidence and support of our sponsors and the American people. In fact, I would like to associate myself with remarks of Congressman Howard Wolpe at a recent AAAS Science and Technology Symposium, where he said, "I hope that increased Congressional oversight of federal science programs will lead to two results: first, increased efforts by the science community to police itself by engaging in a constructive self-critique; and second, a realization that increased Congressional scrutiny will ultimately lead to stronger federal science programs."

Finally, I would like to invite any of the Committee or Staff to Rensselaer to see some of the exciting forefront research that is happening on our campus and to examine our processes of assuring that our sponsors get good value for their support of our work.

Concluding Remarks

I would like to conclude with a few observations. As many of my friends and colleagues know, since coming to academia I have become a strong critic of the standard fund accounting method used in academia. It is a system that is very good at

making sure that if someone gives you money for a particular purpose, that money is used for that purpose. But it is very bad at giving you information needed for operating a complex enterprise, and it is even worse in presenting to the operating managers of the enterprise the kind of information necessary for priority trade-off decisions that continually need to be made. As a consequence I have changed the financial budgeting and reporting system at Rensselaer and believe that we are now able to manage the enterprise much, much better.

But, having said that, I do not believe it is the accounting system alone, or even in large measure, that has led to some of the recent controversies over academic research overhead. Rather, there are several different phenomena that are causing the trouble and it will be important to keep these separately in mind as we try to fix the system.

First, of course, are the headline-grabbing instances of allegedly improper or frivolous charges that found their way into government bills. These ought to be the easiest to correct by staff training and better local accounting systems.

Next, are cases of ambiguity over whether charges are allowable or not. Bob Rosenzweig, President of the AAU, has likened the situation to that of a taxpayer going to his/her accountant and saying "Here's my income tax. I want to pay every penny that the law says I need to pay. And where there's doubt, I want you, the accountant, to resolve it in my favor." The analogy is good but the strategy of the taxpayer may not be smart. If a later decision says that the judgement of the accountant was bad, then it's the taxpayer that bears the consequences. I believe it is far better to take seriously the words of A-21, "The successful application of these cost accounting principles requires development of mutual understanding between representatives of universities and of the Federal Government as to their scope, implementation, and interpretation." The accountants on a campus and the

accountants in the offices of the cognizant audit agency ought not to be in strident, adversarial roles but rather should be charged with the responsibility of negotiating a rate that is fair and equitable to both parties - both should be tough minded but fair. To make this work there needs to be more uniformity in the decisions of various regional offices and agencies brought about by stronger Washington-based policy guidance. One of the problems has perhaps been the aggressive adoption by some universities of the strategy noted by Rosenzweig coupled with an inability by the cognizant federal auditing agencies to perform audits because of resource limitations.

The augmentation of A-21 by A-133 should go a long way toward correcting this situation. In fact, I believe the compliance audits required by A-133 will foster the kind of on-going discussion and communication between academic institutions and their cognizant audit agencies needed to foster the "mutual understanding" called for by A-21. I believe the increased expense of these audits will be well justified if it gives Congress and the federal government greater confidence in the validity of the system. However, I would hate to see minutiae added to A-21 that would increase accounting costs beyond the value of the errors that would be caught by such additions.

We are at a crucial moment when the scales of public confidence can be tipped one way or the other. It is immensely important to the nation that the preeminence of our academic research system be preserved and strengthened. The primary responsibility for this must rest with the academic community which should vigorously and quickly correct any aberrations in its systems of accountability. But, this Committee and Congress can also help us find constructive paths to achieve this goal.

Thank you for the opportunity to present these views.

Appendix A

How the indirect cost process works at a university:

The committee has asked for an explanation of how the indirect cost process works at a university. You have a great many experts from the agencies here who can give you the details of that process. But, I thought that it might be useful to have the simplified explanation that is understandable to a financial layman, myself, and to illustrate it with examples from my own campus.

1. It starts with the collection of all sorts of specific expenses, consisting of vouchers for payments made and records of attributed costs. At Rensselaer, we process approximately 773,000 transactions per year. One has to have a system to verify that each payment is legitimate and that the rules for computing attributed costs are followed. With travel costs, for example, you first have to verify that each charge is legitimate and reasonable and the purpose of the expense is business related.

2. Second, each of these items must then be assigned to one of a number of cost pools. These various cost pools fall into either direct charges--ones that can be associated directly with a specific program or project, or indirect charges--ones that cannot be easily associated directly with such an activity. In the case of a research project, typical direct charges would include materials used in experiments, salaries of people doing the work, instruments used in the research project, etc. Typical indirect charges would be the costs of heating, lighting and cleaning the space, space that is typically shared with other activities; administrative costs, etc.

Sometimes, there is an issue as to the nature of a cost, which will influence whether it is considered direct or indirect. A case in point is the tuition costs of graduate students who are working on research projects. In some institutions, by agreement with the cognizant auditors, these costs are put into

the employee benefits pool and spread over all contracts. In other institutions these costs are charged directly to the research contracts. The latter approach allocates proportionally more costs to the individual research project and may provide a disincentive to recruit graduate students. The former approach, by spreading the cost of graduate education throughout the institution, reduces costs to the individual project and thus creates incentives for expanding investment in future scientists. It also, of course, loads these costs onto other university cost centers, which may not fully appreciate the strategic importance of this approach.

Federal policies related to funding research facilities and equipment can also illustrate how policy considerations are interrelated with cost accounting regulations. Current practices permit universities to capture all capital costs for research buildings and equipment over the useful life of the investment on a straight line basis. (Equipment purchased specifically for a research project is an exception.) This approach, requiring universities to commit their own resources over long periods of time to fund the necessary capital investment, tends to encourage deferral of critical infrastructure improvements. Universities may also be reluctant to make necessary investments in light of uncertainties as to future research awards.

Modification of A-21 regulations permitting accelerated depreciation of capital equipment would encourage necessary capital investments, but would, of course, result in higher overhead charges in the short run, and redistribute available funding. A Federal program directly funding research facilities, if conducted strategically and responsibly, would lean the federal support mechanism even further toward a long-term investment approach.

These choices can have a big effect on how research is actually carried out at various institutions and is, moreover, related to the philosophy of what the sponsor wants to achieve: research results only or research and education. It is an issue

that has been decided differently in different regions and at different institutions. In my opinion, it should be driven by institutional and federal policies and not by the idiosyncrasies of the local auditors.

These examples illustrate the complexities that can enter into the accounting system even at this relatively early stage.

The cost pools that we use at Rensselaer as specified by OMB Circular A-21, are shown in Figure A.

3. The third step is to allocate the indirect cost pools to direct cost pools. This is a relatively complex cascade process that is also specified by OMB Circular A-21. The uppermost indirect cost pool is first distributed among all the pools below it - indirect and direct - according to a specified algorithm. The next indirect cost pool, which now contains not only the original items placed in it but also the allocated amount from the first pool, is then distributed according to an appropriate algorithm to all the pools below it, both indirect and direct. Most utility costs, for example, are allocated directly to instruction, auxiliary services and research while a smaller portion is allocated to indirect costs such as administrative buildings and library. Administrative buildings and the library are in turn allocated among the instruction, research and auxiliary functions. This process is continued down the list, pool by pool, until all of the indirect cost pools have been eliminated from the list and their sums distributed to the direct cost pools. One now has a set of direct cost pools with all indirect costs allocated to them according to the prescribed accounting rules. I have tried to illustrate this step graphically in Figure B.

4. The next step is to calculate the overhead rate on research. This rate, widely quoted in the press, varies institution by institution. To calculate it, aggregate all of the indirect costs that have been allocated to sponsored research by the process described in step 3, above, and then, divide this amount by the sum of direct charges for compensation plus materials. This is illustrated in Figure C.

5. Once this overhead rate is computed for a given year of operations it is used in proposals and in billings for one or more subsequent years.

Let us use as an example a grant awarded for conducting research in advanced materials. When costs are incurred for salaries, materials, equipment, and student support, Rensselaer submits a voucher for these direct expenses plus an allocation for indirect costs based on the previously negotiated rate. In this case, overhead reimbursement would be calculated using compensation and materials costs only--student support and equipment are not included in the overhead calculation per A-21. After receiving the bill, the sponsoring agencies remit payment via check or electronic funds transfer to Rensselaer's bank account.

The cognizant auditing agency and the university may choose to negotiate multi-year agreements on overhead rates. This is what we have done at Rensselaer; based on an analysis of 1987 costs, we negotiated a three year overhead rate agreement - for 1989, 1990, and 1991. We have just completed an analysis of our 1990 costs and are submitting them as the basis for another multi-year agreement.

As you can see the process is fairly complex and there are many places where issues may arise.

1. The federal government and the university may have different interpretations on what is and is not allowable. For example, A-21 does not allow the costs of commencements, convocations or alumni activities to be included in the indirect cost pools allocated to sponsored research. Likewise, athletic facilities, alumni activities and fund raising activities are not allowable by the government and yet are clearly vital for a university. Ambiguities can arise about the classification of some costs. For example, A-21 does allow "...expenses incurred in accordance with the institution's established practice or custom for the improvement of working conditions, employer-employee relations, employee morale, and employee performance are

allowable." There is sometimes a fine line between this and entertainment, which is not allowed.

2. Even with costs that are allowable, it is not always crystal clear where they belong. I've already given one example of graduate student tuition. Other examples include Athletic facilities, Academic Deans' costs and Safety and Security. While A-21 dictates the appropriate allocation pool for each item (Auxiliary, Departmental Administration and Operations and Maintenance, respectively); the reality of the costs in today's environment suggest possible changes may be necessary to A-21. For example, the Athletic facilities are used today for faculty and staff in addition to students; the Academic Deans maintain an active role in the Institutional decision making process; and Safety and Security not only safeguard property, they safeguard people in today's environment. This creates the question as to whether some of these costs should be reflected in the General and Administrative cost pool rather than in those pools previously noted above.

3. And finally, the rules by which the indirect cost pools are allocated are intricate. For example, in the space allocation process, joint space (space used jointly for research and instruction) is allocated on the salaries and wages of the department occupying the space. In order to properly allocate library costs, it is necessary to define the faculty, staff and student user population and then relate that information to institutional salaries and wages by direct cost pool. To allocate depreciation on land improvement (ie: sidewalks, outdoor lighting) the benefactors of the land improvements must be identified. This is accomplished by calculating the full time equivalents of faculty, staff and students and then allocating the costs based upon the salaries and wages of each direct cost pool.

The reason that A-21 is so long and so complex is that it attempts to cover many of these issues. But it simply can't cover every imaginable circumstance so that is why the word "reasonable" is used over and over again in A-21 and why the circular states, explicitly, that "The successful application of these

cost accounting principles requires development of mutual understanding between representatives of universities and of the Federal Government as to their scope, implementation, and interpretation."

RENSSELAER

Total Operational Flows
FY 1990

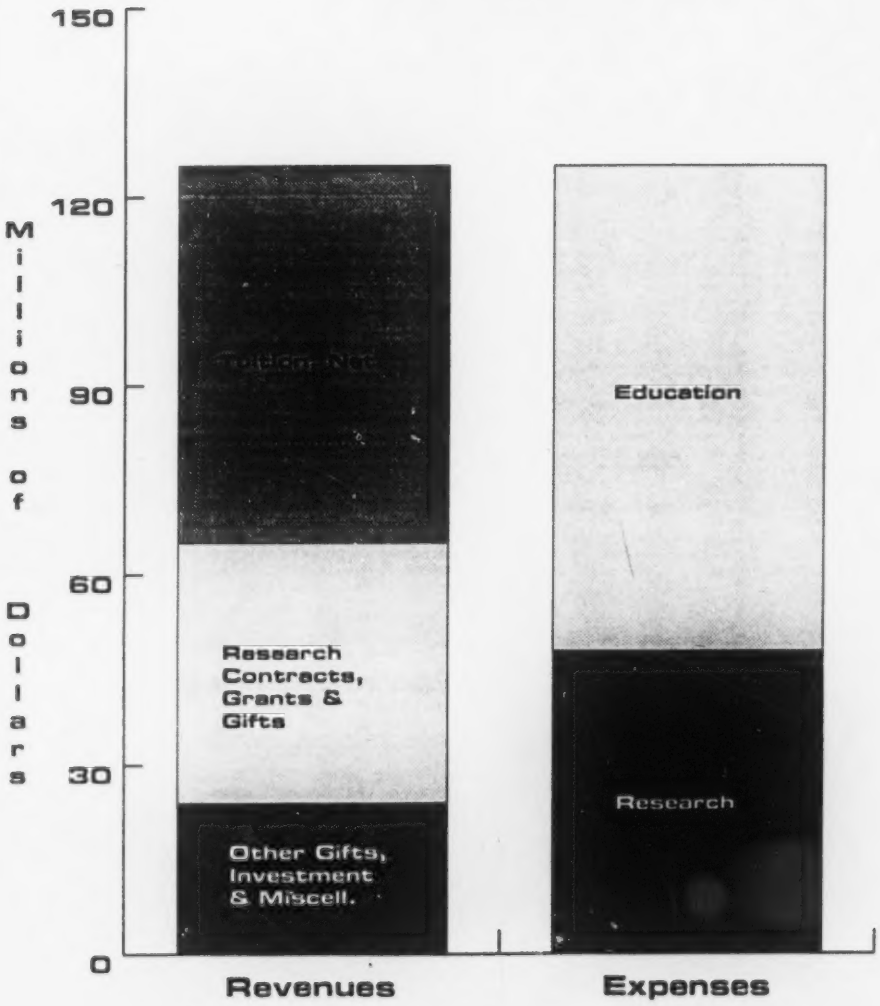

Figure 1

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Total Research Volume
FY 1990

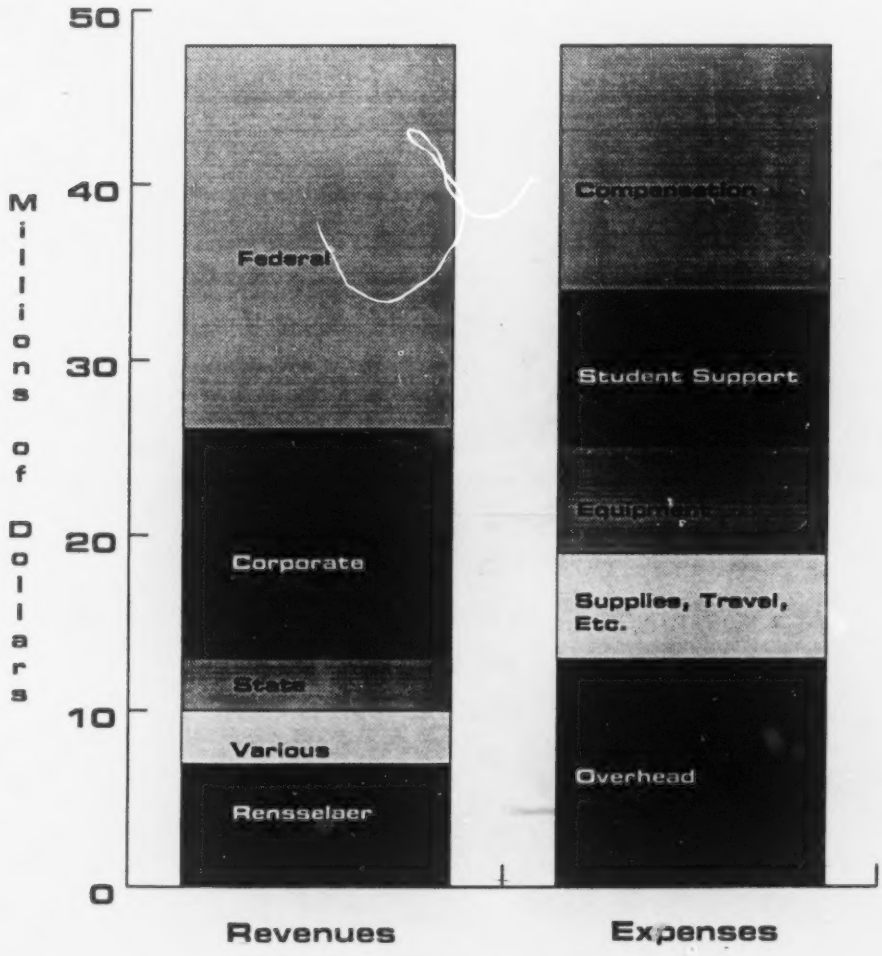

Figure 2

Figure 2A

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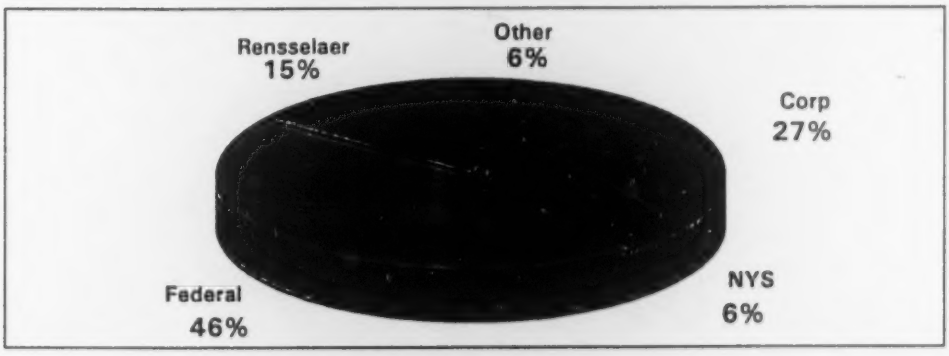
RESEARCH FLOWS
FY 1990
COMPOSITION OF REVENUES



Federal:		
DOD	$6	Million
NSF	7	
NASA	3	
DOE	2	
NIH	2	
Commerce	2	
	$22	
NYS	3	
Corp	13	
Various	3	
Rensselaer	7	
	$48	

Figure 3

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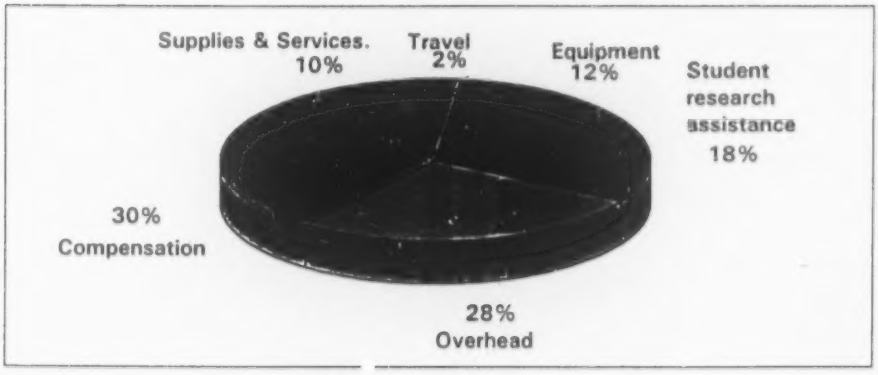
RESEARCH FLOWS
FY 1990
COMPOSITION OF EXPENDITURES



Compensation		$14	Millions
Student research assistance		9	
Other			
Equipment	6		
Supplies and Services	5		
Travel	1	12	
Overhead		13	
		$48	

Figure 4

RENSSELAER
INDIRECT COST COMPONENTS

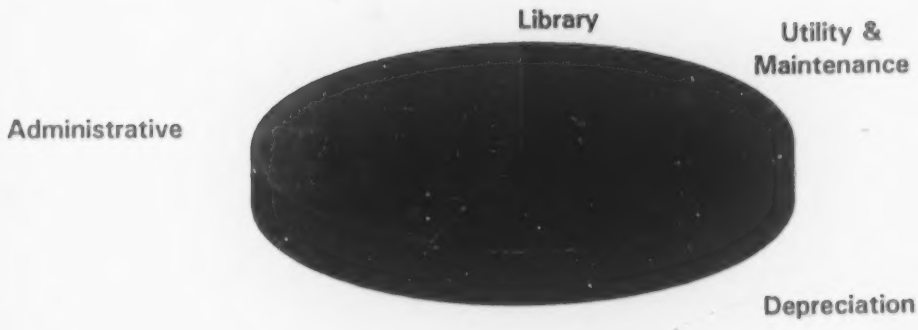
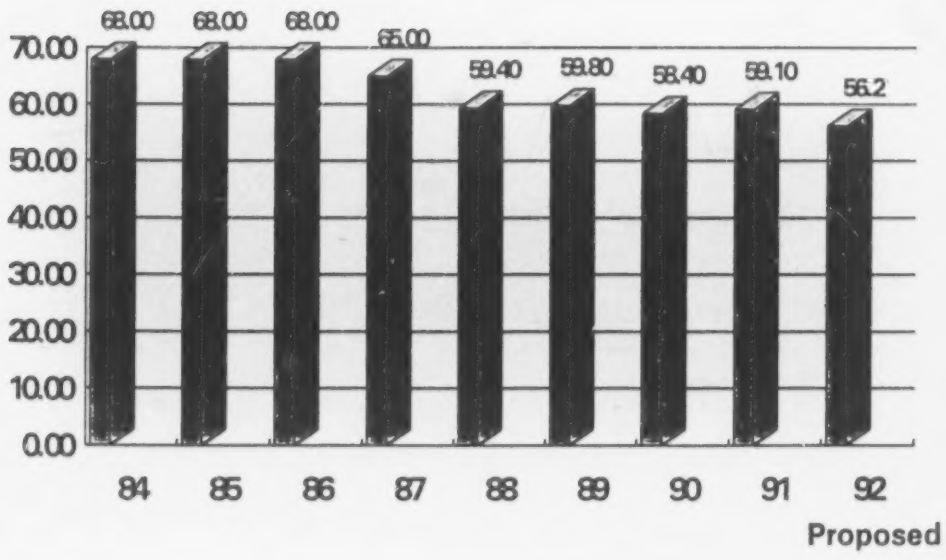


Figure 5

RENSSELAER

SPONSORED RESEARCH OVERHEAD RATE HISTORY



Cost Categories

Indirect Costs

1. Building Use
2. Equipment Depreciation
3. Operations and Maintenance
4. General and Administration
5. Library
6. Departmental Administration
7. Sponsored Projects Administration
8. Student Administration

Institutional Activities

9. Instruction
10. Educational Service
11. Sponsored Research
12. Auxilliary
13. Other Institute Activities

FIGURE A

Allocation of Indirect Costs

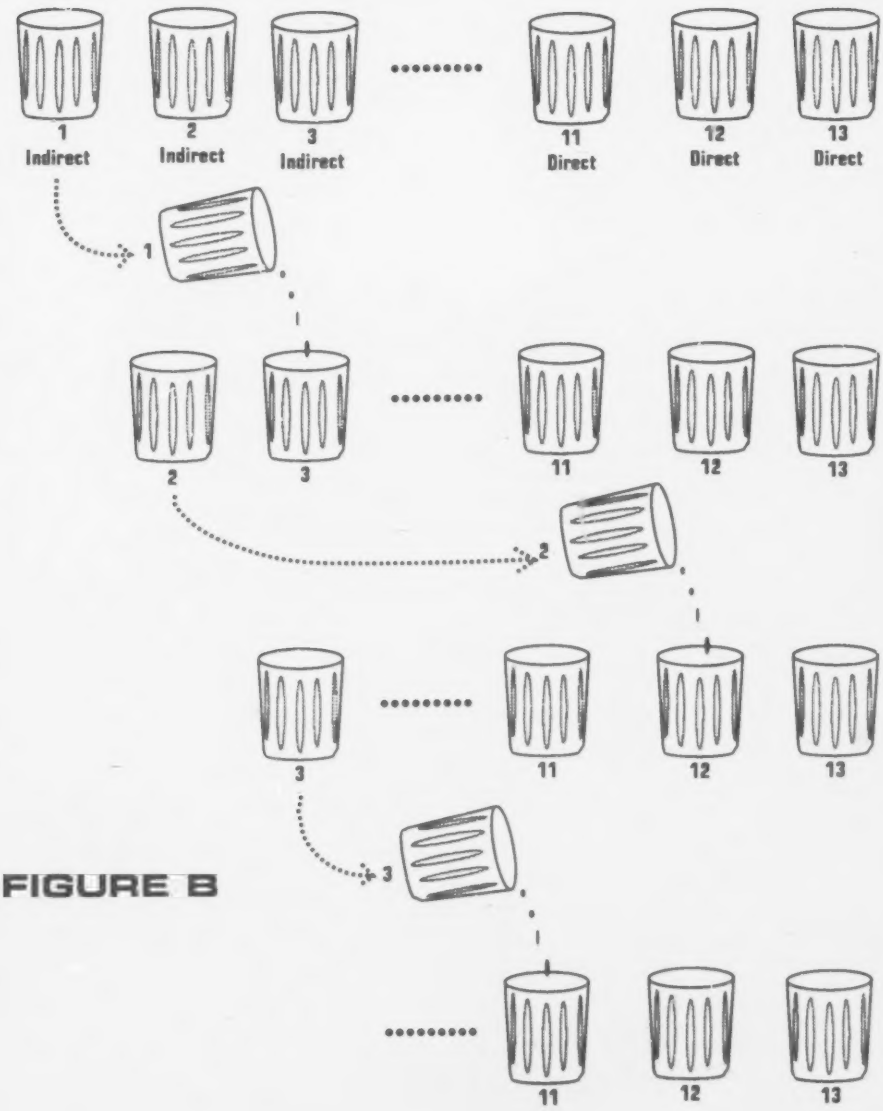


FIGURE B

Sponsored Research

Direct Costs

Compensation
Materials
Equipment
Travel
Student Support

Indirect Costs

Sum of cascaded allocations from:

- Building Use
- Equipment Depreciation
- Operations and Maintainance
- General and Administration
- Library
- Departmental Administration
- Sponsored Projects Administration
- Student Administration

$$\text{Overhead Rate} = \frac{\text{Indirect Costs}}{\text{Compensation + Materials}}$$

FIGURE C

Mr. BOUCHER. Thank you very much, Dr. Schmitt, for that thoughtful statement this morning and for some of the recommendations that it contains for ways that the system of funding university research can be strengthened.

Some of the ideas that have been discussed for new approaches to the indirect cost recovery question I would like to share with you this morning and just get your comments as to whether some of these would be better from the standpoint of university administrators, or worse, than the current system and which among these you think might be most appropriate.

One of the proposals that has gained significant currency is that there simply be a uniform cap imposed on indirect costs that would apply to every university and to every Federally-funded research project at that university, and so the first question would be, what is your view about the appropriateness of simply replacing the current system of negotiated rates at other universities—at separate universities with a uniform cap?

Dr. SCHMITT. My reaction to that, Mr. Chairman, is that some sort of a cap on administrative costs is not an unreasonable alternative to look at. In fact, it is one of the alternatives, as I understand it, being discussed by the AAU [Association of American Universities] and OMB.

However, I would be very reluctant and would strongly advise against any similar cap on depreciation on equipment and facilities. I think that there, it is such a key element in the strength and health of our research system, and it varies campus by campus.

My campus, for example, is 166 years old. Now, there are many campuses, strong research campuses, that are much younger, and the balance of maintenance/depreciation costs on the various campuses will vary greatly, as will the depreciation of the instruments needed in different fields of research.

So I am much more receptive to a discussion of reasonable caps—I think one has to always pose that word "reasonable"—on administrative costs than on other types.

Mr. BOUCHER. So your recommendation would be that, if there is a cap, that it apply only to administrative costs and not to other aspects of research activities.

Dr. SCHMITT. Yes.

Mr. BOUCHER. Well, you have mentioned buildings and depreciation on those and on equipment, and, of course, there is a major problem there. We have a somewhat sporadic system at the Federal level of offering funding for bricks and mortar construction at universities. It is often done through the appropriations process in a way that doesn't always take into account the relative merit of the various projects that are being proposed for funding.

I wonder if perhaps taking building depreciation out of the indirect cost formula altogether might be a reasonable approach in the event that we could rationalize the means by which direct funding for construction and maintenance and upgrading of buildings takes place—were put into effect. Do you have any response to that?

Dr. SCHMITT. Well, if you were to take what is normally regarded as depreciation charges out of indirect and put them in direct, it would be, I think, at variance with commonly accepted accounting practices.

Mr. BOUCHER. Well, no. You may misunderstand my question. What I am suggesting is that, instead of having building depreciation as an aspect of indirect costs, simply have a rationalized and better funded system of making grants directly to universities for the upgrading and construction of buildings used for research.

Dr. SCHMITT. That is certainly an alternative.

I guess that I would be a little bit dubious about the long-term viability of that type of an approach, Mr. Chairman. In fact, I think that probably both approaches are needed to solve the problem.

As I recall, the Packard-Bromley report of 1986 or so addressed that issue and recommended that both approaches were needed in light of the conditions on American campuses today.

Mr. BOUCHER. Well, I share your concern about whether or not there would be regular funding for the direct grant-making process for construction of buildings. The administration's budget request for the National Science Foundation for this year, as I think you know, does not request funds for research facilities construction. So the chair certainly shares your concern on that count.

To return just for a moment to the question of the appropriateness of caps, it has been argued that, while a uniform cap would become a ceiling on indirect costs, that it might also become a floor. There are a number of universities that today are operating with indirect cost rates significantly less than the ones that have been the most publicized and the ones that negotiate their own rates. If we had a uniform cap, is there a legitimate concern that it would then also become a floor to which other universities would rise in their indirect cost reimbursement requests?

Dr. SCHMITT. I think the rules you would have to establish would have to be appropriate to prevent that from happening, and it is my understanding that the discussions between AAU and OMB have addressed that issue, Mr. Chairman. I am not sure that they have come to final conclusions on it. It is an important and detailed issue that requires quite a bit of thought in arriving at the final details of how you approach that.

The concept is what I really endorse. I am not prepared this morning to respond to you in terms of exactly how that is carried out. I think that it needs a lot of discussion between OMB, Congress, and academic institutions to arrive at a reasonable approach to it, but the principle, I think, is a reasonable one.

Mr. BOUCHER. Another broad concept that has been discussed is not having the Government concern itself with indirect costs at all but simply have the research grants made directly to the principal investigators and have the principal investigator, in turn, negotiate with the university that portion of grant funding the PI [Principal Investigator] receives, which would be paid over to the university in order to account for indirect costs and shared overhead. I wonder what your response would be to that kind of system. It certainly would be simpler from the Federal standpoint. What kinds of problems might that create at the university level?

Dr. SCHMITT. Whatever the Federal view would be, I think it would be a very—my own personal view is, that is a very bad idea for quite a number of reasons, but one is, it drives a wedge between the universities and their faculty, and one of the things that is

needed on campuses is unifying—things that unify people, that promote cross-disciplinary kinds of research, for example, and you don't need any additional wedges between administration and faculty on universities for a healthy, thriving university. So I would not really favor that at all.

Moreover, that moves in a direction that is, in my view, totally outside the pale of ordinary cost accounting and good management principles basically. I think it is far better to pay more attention to management in academic institutions and on how they behave and do their job than to try to make each individual investigator their own manager.

Mr. BOUCHER. Another proposal has been to essentially replace the function of the Office of Management and Budget now with a Government-wide set of regulations to determine what are allowable costs and what are not, with a broad direction to each research agency to negotiate rates itself, to work within specific disciplines, to take into account the different costs that exist within different disciplines.

It is entirely possible that research conducted at social sciences could differ from research conducted in biomedicine, for example, and yet, under the current system today, those different indirect costs are not taken into account. One discipline could rely more on buildings and other shared facilities at a university than another. Would a system that takes into account those differences, and simply directs the funding agencies themselves to make the determination of what those differences are, be appropriate?

Dr. SCHMITT. I think that would complicate and increase the accounting costs on every campus in the country if one were to do that, Mr. Chairman. On the average, the balance among disciplines on any campus will work its way out in the overhead rates on that campus, and I think the principal differences will be in instrumentation and facilities rather than administration in any event.

The other point I should make is that in academic research and under Federal grants, a lot of equipment is bought with direct grant money and is charged to current operations that, in an ordinary industrial environment, would be put in a capital budget and depreciated over the future. So in universities you have a peculiar mix of some equipment used in research being paid for out of current operations, other equipment being paid for out of other funds and then depreciated. It is a peculiar mix that you have in the university that is different, I have to tell you, from what it is in industry, and I think the step that you recommend would complicate that even further.

Mr. BOUCHER. Well, I didn't exactly recommend it. I was just asking for your view. It is generally being discussed.

Dr. SCHMITT. All right.

Mr. BOUCHER. We are not exactly getting a ringing endorsement for any of these proposals.

Dr. SCHMITT. I didn't mean to read anything into your statement, sir.

Mr. BOUCHER. Let me try one other one, and then I will conclude my questions.

One other idea—and I will disclaim authorship in any of these ideas; these are simply possible approaches that are being dis-

cussed—would limit the indirect cost reimbursement to universities only to those items that are add-ons by the university for the research project in particular. In other words, costs that the university would have to incur anyway, that are not driven by the need to conduct the research, would then not be recoverable as indirect costs. How would you respond to that?

Dr. SCHMITT. Again, that will lead to a financial and accounting nightmare, Mr. Chairman. I don't really see how one could put that recommendation into effect in an accounting system on a campus short of running up administrative costs because of your financial operation that you would have to enlarge enormously. So I think that is an impractical suggestion.

Mr. BOUCHER. Let me get you finally just to comment on the proposals made yesterday by the Office of Management and Budget, the announced intention to modify Circular A-21 to disallow a number of specific costs. These would include expenses for lobbying, all alcoholic beverages, housing and personal living expenses for the university officers, automobiles and other goods or services for personal use, and salaries of university officers that exceed $120,000. Could you comment on that set of recommendations?

Dr. SCHMITT. Yes. I have just had the opportunity to read the Washington Post this morning and also to see the copy of the release put out by OMB, and, reading down the list, my reaction is very simple—that is that the list clarifies a number of instances that I think many of us had assumed were already covered and makes it quite explicit and clear, and it does add a few items on the list. My initial reaction is, there is nothing terribly unreasonable in this list, and it would be helpful.

However, I would like to come back to say once again that no list of this sort, however skillfully it is composed, will solve the problem. The main point of my testimony was that there are always gray areas and that institutions will have a propensity for making decisions on their own in those gray areas that will be favorable rather than unfavorable to them. The only counterweight to that is to be sure that one has an adequate compliance audit that forces the discussion between the audit agency and the university to clarify those gray issues, to find on which side of the line they lie.

So I just want to reemphasize once again, whatever improvements you make in A-21—and I think that one can make improvements—that, in itself, is not enough, but the OMB has taken a step of issuing A-133 which requires compliance audits every two years starting the first fiscal year after 1990, I think, and that is a big step forward, in my opinion, and it is probably the most important step that has been taken.

Mr. BOUCHER. Thank you very much, Dr. Schmitt.

The gentleman from California.

Mr. PACKARD. Dr. Schmitt, you have stressed the gray area issue, that there always will be gray areas. Government tends to look for ways to remove the gray and make things black and white. Would it be appropriate, or is there any effort being done by academia itself in trying to propose and suggest how to deal with the gray areas?

Dr. SCHMITT. Well, the reason that there will always be gray areas is because those gray areas are determined by policies and

missions and goals in some instances. I gave one example in the written testimony. The tuition costs of graduate students are handled differently today at different institutions, and you can make an argument for handling that either way, either as a direct cost on the research contracts on which these graduate students work or as an employee benefit that goes into the overhead pool.

Quite honestly, if you want to encourage the use of graduate students in research, which I think you ought to do, what you probably want to do is to urge that that be put into the indirect cost pool, because if it is in the direct cost pool professors will tend to hire post-docs instead of graduate.

What I am trying to illustrate to you is that gray areas are intrinsic, and you can narrow them, you can reduce them, and every time we see aberrations we ought to try to clarify them, as I think this OMB thing does, but the way to get rid of them is by--or the way to reduce them is by assuring that you have the audit function that is equally strongly pursued.

Mr. PACKARD. Government will tend, though, to—well, let me rephrase. When there are gray areas, abuses almost always result, and then abuses invite further regulation, and, if I am not mistaken, I believe that regulation, Government regulation, has led to some of the problems of indirect cost, increased indirect cost. Is that true?

Dr. SCHMITT. Yes, that is true.

Mr. PACKARD. Do you have a feel for how much of the indirect costs can be attributable to Government requirements and regulations?

Dr. SCHMITT. No, I really can't answer that, Mr. Packard, I'm sorry.

Mr. PACKARD. Okay.

In the depreciation, the universities can choose between the use charges and depreciations to recover facilities investments. What is the difference in this practice, and do either of these methods reflect real facilities costs?

Dr. SCHMITT. Yes, well, the depreciation method does. The reason—and that is what we use at Rensselaer. We have instituted a system of real depreciation charges on facilities.

It is my understanding that the reason some universities have trouble in doing that is because of the fact that there is not an adequate appraised value of the facilities being depreciated, or in question, I should say, and that for that reason they are forced to use the use charge instead.

But, in my opinion, good business management, whether it is universities or wherever else, ought to use depreciation schedules for those matters.

Mr. PACKARD. Should incentives be developed to encourage universities to recover facilities investments or, rather, to dedicate a portion of their recovered indirect costs specifically to research facilities?

Dr. SCHMITT. In my personal opinion—and I don't know how widely this is shared—the answer to that is yes if you can devise incentives to do that. My personal opinion—and, again, I repeat to you, I am a novice in academia, having been there only three years, but my very distinct impression is that academic institutions

tend to underinvest in renovation and maintenance of facilities grossly. It is an item that is easy to put off, and I think it has resulted in what we have seen come out of many studies about the poor condition of facilities on campuses across the country today.

Mr. PACKARD. How would you recommend that we reform the process to meet the needs that have been surfaced because of some of the problems?

Dr. SCHMITT. Well, in the first instance, I think the instances that have made the headlines, which I think everyone agrees were unjustified, ought to be, in truth, relatively easy to correct basically.

What I try to emphasize in my testimony is that there is a more fundamental issue—that is, that there are legitimate gray areas that cannot be defined away, however cleverly you write A-21, and that you have to have both parts of this system, both the A-21 type of regulation and the compliance audit to reduce the gray areas. Just as you said earlier, Government would like to get rid of them, it is that compliance audit, the discussions that ensue from that, that will help do that. So that is the main thrust of what I am really urging on this committee this morning.

Mr. PACKARD. According to some figures that I have seen, indirect costs represent over 50 percent of most of the research grants. Is this unrealistic?

Dr. SCHMITT. No. I mean the numbers I showed, I think—our overhead rate is 59 percent, which means that you add 59 cents to every dollar of direct compensation and materials, but the numbers I showed indicated that when you look at total costs, not just compensation and materials but equipment and student wages—things like this—that 28 cents out of every dollar is what goes to indirect costs.

Mr. PACKARD. I see. And do you feel that that is a responsible and realistic figure?

Dr. SCHMITT. I think that is in the right ball park. It is not unreasonable. I mean I don't detect any fundamental unreasonableness in the type of things being charged to indirect costs. I mean it does require many of the items of that indirect cost.

Mr. PACKARD. Thank you, Mr. Chairman. I have no further questions.

Mr. BOUCHER. The chair thanks the gentleman and recognizes the gentleman from Indiana, Mr. Roemer.

Mr. ROEMER. Thank you, Mr. Chairman, and I just want to commend you, first of all, on your testimony, your statement before the committee, and also, of Dr. Schmitt, thank you very much for your enlightening testimony as well, too.

I guess my opening statement here is a little bit more directed at OMB's failure to show up for today's hearing, Mr. Chairman. I was down at the White House last week, and, after the President made his new proposals on education—and I think this committee's hearing is directly related to our future strength in education—that I indicated my willingness to work with the administration. I thought the President proposed some good, innovative ideas—that we cannot afford to throw money at problems and that we need some change and reform.

It is obvious we need some change and reform in the way we are conducting and handing out our monies here when we see universities like Stanford abuse this Federal money through athletic equipment, and luxury yachts, and so forth.

But, Mr. Chairman, I am very disappointed that the OMB would not come down here today and extend the same kind of cooperation that many of us in Congress are willing to extend to improve research schools throughout the United States and coming up with new, innovative solutions, and I hope that OMB will reconsider and will come up here and talk about the new Circular A-133 and ways by which to improve Circular A-21, and that brings me, Dr. Schmitt to—if you could comment a little bit more on your statement.

You talked a little bit about OMB's Circular A-133, I believe, on regular outside audits. Has Rensselaer been audited? And, to the best of your understanding, how often are other universities audited? How often—how frequent or infrequently does this take place?

Dr. SCHMITT. The implication of my remark is, I believe the compliance audits have been infrequent in the past. However, A-133 requires that they be done every two years henceforth, and the requirement for A-133 is that it begin in the first fiscal year after it was issued, which was March of 1990, and the outside audits, incidentally, can be done by independent auditors. They are going to be paid for by the institutions, incidentally, but they are independent audits. We get independent, outside audits for a lot of our other operations now.

Our outside audit firm happens to be Coopers and Lybrand, and before this came up or anything, we had compliance with A-133 scheduled for them, a compliance audit that they will now do at the end of this fiscal year which—our fiscal year ends on June 30—and I presume that that same thing is going on at every other research university today.

Mr. ROEMER. So the Government does not pay for those audits; your university pays and contracts out for those audits?

Dr. SCHMITT. Those costs will go in our overhead, so—

Mr. ROEMER. So we get it eventually.

Dr. SCHMITT. Some of it, yes.

Mr. ROEMER. Okay.

You also said—you talked about the increases, you know, in terms of indirect costs. The chairman's testimony—we looked at about $2.5 billion, it looks like, in indirect costs, and that is escalating all the time. You also indicated that universities are being forced to improve effectiveness and reduce costs. Can you give me some specific ways that you, at your university, are reducing costs and that we don't see what amounts to just an automatic 30 percent handout for indirect costs every year?

Dr. SCHMITT. Yes. Well, I said that I suspect that every university is facing the same kind of financial pressures that Rensselaer is and that those are going to drive people to try to increase productivity, but let me give you some specifics. You want some specific examples. They are kind of homely examples, if you like, but I am very happy to give them to you.

Several of the steps I have taken on our campus since coming there to get costs down: In our buildings and grounds operation, for

example, when I came on campus there were 170 people employed who painted the walls, and mowed the lawns, and things like that, and today there are 130 people in that function instead of 170, and the job is getting done reasonably well. We have contracted out some of it, got improved productivity among employees and others, and, quite honestly, my theory in running an operation is that if you have—I mean poor performance feeds on itself, and good performance feeds on itself, too. So that in the process of improving the productivity of any entity, it kind of feeds on itself and gets better and better along with morale, so I think it is a positive step.

I mentioned earlier that some of the services on campus we have reduced. The waste baskets are not getting emptied quite as often as they did, but, in fact, they are still quite adequate. Our mail service on the campus is not quite as good as it used to be, but it is still quite adequate.

I did, I must say, test the limits of cost cutting two years ago when I decreed that there would be no Christmas parties, and I discovered the difference between entertainment and employee morale. I got characterized as a combination of the Grinch and Scrooge, and I had to back off from that a little bit the following year. But I keep testing to see, you know, how you can get costs down at our institution.

We used to have an inside printing operation that did all the university printing. I spun that out; I spun them out as an independent business; they now are on their own, and they are getting other business besides ours. I saved $300,000 in overhead costs.

So there isn't any one, simple, magic process for doing it. One has to just keep after it and realize that good management is just as important to a university as it is to a business.

Mr. ROEMER. And, Doctor, I appreciate those efforts, whether it is reducing the cost through less frequently emptying that waste basket.

I just conducted a series of town meetings back in my district, and when people read about the coffee makers in the defense industry, the hammers, now with our universities, it really erodes confidence in us and in you, and I am a very strong proponent in research and development and research funding.

My brother-in-law is a scientist, an aspiring scientist. This $369,000 that Stanford squandered would fund many young scientists to stay in environmental research, and I think it is a travesty, that we have to work toward better accounting methods and, as you said, mutual understanding between the Government and the universities.

I have nine universities in my district, and I am very proud of those universities and the efforts they have in research and development, and we had a hearing earlier this year that said that we in the United States are spending half the amount of money in 1991 as we did in 1968 on improving instrumentation in research facilities at our universities. That is a travesty.

But—and let me throw out a very probably contentious and controversial proposal that is an easy solution. Is—what about, as we have seen in sports, a death penalty proposed for athletic departments that abuse the privilege of what institutions of higher education should be? Should there be something for those universities

that also misuse the public trust and what is supposedly building a brain trust is actually a brain drain from our young scientists? Can you comment on that?

Dr. SCHMITT. Well, I don't know what the death penalty would be like. I would not, I guess, want to equate the importance of academic research with that of sports, however much—I am a very great fan of many sports, football included.

Mr. ROEMER. I am sure other universities would not want to see that happen as well.

Dr. SCHMITT. I can't help but remark that a coach at perhaps the most famous university in your district remarked some time ago that, "I never tell people my problems; 80 percent of the people don't care, and the other 20 percent are happy I have them."

Mr. ROEMER. Well, one of those same coaches, Doctor, has just graduated every single athlete coming through his program in the last 20 years that he coached there, something I am very proud of and something that we need to instill at the rest of the universities as well.

Dr. SCHMITT. I would like to say that I am proud of that at Rensselaer, too. The only Division One sport we have is hockey, and of our 25 hockey players in the last three or four semesters, half of those kids have been on the dean's list.

Mr. ROEMER. Congratulations.

Dr. SCHMITT. So I share your interest in having a strong scholar base for your athletics.

Mr. ROEMER. Well, you are still not getting away from my question, Doctor.

Dr. SCHMITT. Well, you know—

Mr. ROEMER. Instead of going so far as a death penalty, what about wading into the gray area a little bit more?

Dr. SCHMITT. Again, I guess my response to that is that I think that much of the problems could be fixed and would be fixed by the forcing function of compliance audits basically, because it makes people face up to the gray areas and it makes people have discussions with their counterparts in Government—I mean with the Government agencies and auditors—and come to a decision on whether the item belongs on one side of the line or the other side of the line, and it establishes—it forces the communication which gets both parties to understand better the function of the item in question, and sometimes I would assume that the Government auditor, after understanding better the function of the item, would agree that it was legitimate. Sometimes in the discussion, the university, understanding the skepticism, would agree that it isn't.

Let me give you a specific example: housing. I don't mean the flowers, of course, I mean the depreciation and maintenance of university-supplied houses for officials that deal with research. In the past, it has been the common understanding that at least the maintenance and depreciation charges were an allowable cost. Frankly, in our own proposal to HHS for the next round of our negotiations, we had taken those out because of the misunderstanding that has come to surround them. I notice that the new OMB circular would take them out. I mean that is the new clarification of OMB Circular A-21 that was not clear before.

I suspect that if we had had adequate compliance audits in the past, that that issue could have been discussed sufficiently clearly to have come to a conclusion on which side of the line it fell. So I would still highly recommend that that be the approach, Mr. Roemer.

Mr. ROEMER. Thank you, Dr. Schmitt, and I look forward to hearing the comments from my colleague from Arkansas, who is now in the chairman's position, who is a former university president.

Thank you, Mr. Chairman.

Mr. THORNTON (presiding). Thank you very much, Mr. Roemer, and, following the practice of, first arriving, first questioning, I would like to recognize Mr. Boehlert for his questions.

Mr. BOEHLERT. Thank you, Mr. Chairman.

I am getting a little bit concerned. I am afraid tomorrow's headlines are going to read, "Death penalty proposed for indirect cost kingpins."

Mr. ROEMER. Don't let that appear in my district, okay?

Mr. BOEHLERT. Let me ask you, Doctor: Let's go back a couple of chapters in your exciting life story, from your experience at General Electric, and I know the situations aren't parallel and that sometimes it is very difficult to make comparisons. But how were indirect costs charged to specific research endeavors in a major Fortune 500 company? Is there anything we can learn from the business approach?

Dr. SCHMITT. Well, only that, you know, the same principle is applied, and I think I made the comment in my testimony here a month ago that the system of cost accounting is intrinsically complex and it cannot be simplified down to get rid of these gray areas.

But what I would say is, one thing within GE is, it is noted for having a very strong internal audit team, and every—periodically, when I ran GE's corporate laboratories, periodically these traveling auditors would descend upon me and spend a month in my organization, and they had the right to probe into anything they wished—you know, dollar amounts and other things—and, quite honestly, it was a good discipline. I didn't always agree with their conclusions at the end of their audit, but it was always a good discipline and resulted in my seeing ways to improve the operation of the organization, and sometimes they found mistakes. So the approach there was right in line with what I am strongly recommending.

But there is no significant difference in the concept of having to have indirect costs and direct costs in any operation and having to find a way of allocating those indirect costs to the direct ones.

Mr. BOEHLERT. When David Packard came out with his report in 1986, at that time were you chairman of the Science Advisory Board?

Dr. SCHMITT. Yes—the National Science Board, yes.

Mr. BOEHLERT. The National Science Board, yes.

That died a natural death, I guess. But what was your reaction to his report and recommendations at the time? Do you recall?

Dr. SCHMITT. Well, they were generally quite positive, is what my memory of them was, because they did at that time address this issue of, should there be an approximate cap? I don't know whether "cap" is the right word or whether it is the word they used on the

administrative side but not—as I recall, not on the facilities and equipment side of it. My memory may be faulty there, but I believe that is what it had in that report.

Mr. BOEHLERT. What would you say, on average, the indirect costs are for research activities? Is there any average figure we can use? Did you mention 28 percent?

Dr. SCHMITT. I'm sorry?

Mr. BOEHLERT. Did you mention 28 percent?

Dr. SCHMITT. Well, the overhead rates which are normally quoted, which are computed, as I said earlier, by taking indirect costs and dividing it by only part of the direct costs, that is where Rensselaer has a 59 percent nominal rate, and research universities vary from 45 to 80—whatever it is. I mean there is a wide range. I think the average is somewhere in the upper 50's, if I recall correctly. So I think that, you know, is what—if you are asking for an average, there it is.

Now that translates—I'm sorry, I forgot your earlier question—that translates into only about—in our case, only about 28 percent of the total costs of a project. So for every dollar I get—total dollar I get—say, from the Federal Government or a particular research project, 28 cents of that dollar goes into indirect costs, and a little over half of that goes into costs related to facilities basically. So a little over 14 cents goes into facilities, things of that sort. Something less than 14 cents—I don't know, 10 or 12 cents—goes into administration. That is roughly what the numbers are like.

Mr. BOEHLERT. For every complex problem, there is always a simple solution, and it is usually wrong. But if we tried to be real clean about it and had just a straight percentage for all in like manner, assuming that—and I think it is a fair assumption to start with—there isn't a research university in America that I know of that isn't scrambling for every buck that it can get. I mean, well, there are a few, I suppose, that are better off than others, but most are really struggling for every dollar they get.

So, assuming that we want to do what I think we do want to do, and that is, be generous in our support of higher education, particularly research facilities as a wise investment for the future of America, what would be wrong with a very generous figure, 70 percent right off the bat? You get a research grant from the U.S. Government, you get 75 percent for overhead indirect costs, and—well, pick a percentage. But I think you see what I am driving at. I am trying to simplify things as much as possible and give an incentive for the research universities to minimize their so-called frivolous cost, and I think it is really unfortunate that the American public now has a perception that research universities all over America are living in the lap of luxury and have expensive yachts and everything else. That certainly is not the case from my perspective.

But is it at all possible to get to the clean type of thing that I am thinking in terms of, with the thought that the universities could use the remaining funding left over for other very valid purposes in a university complex?

Dr. SCHMITT. Well, I don't think it would be healthy to provide, you know, a fixed amount that was so large that no university would complain.

Mr. BOEHLERT. Well, it is the concept I am looking at, Dr. Schmitt, not the percentage.

Dr. SCHMITT. I see.

What I would go back to is my earlier comments on the chairman's question about capped rates, and that is, I think it is more feasible to arrive at a reasonable approach to the administrative part of the indirect costs than to the facilities part. So I would be more receptive to that portion of it being treated in some targeted fashion, but I would urge that the facilities part of it, the depreciation part of it, not be capped.

Mr. BOEHLERT. I couldn't agree more with you there, because that would put our Northeast universities at a great disadvantage, as a matter of fact.

Dr. SCHMITT. That is correct, and, incidentally, even the administrative costs would not be totally fair either because, you know—let me take Troy, New York, for example. In a year where we have 200 inches of snow, we have a lot more expenses plowing that snow than in years where we have 40, say. I don't think we ever had 200, but you understand the principle. Likewise, every university in the country has special circumstances with respect to safety these days, for example. Depending on whether you are urban or rural, you have different expenses. So there are big, real differences in the costs, in the administrative costs, of universities.

Mr. BOEHLERT. Thank you very much, Doctor.

Thank you, Mr. Chairman.

Mr. BOUCHER. The chair thanks the gentleman and recognizes the gentleman from Arkansas, Mr. Thornton.

Mr. THORNTON. Thank you, Mr. Chairman.

Dr. Schmitt, it is a great pleasure to see you here today, sir, and to read and hear your testimony.

I think that we are at some risk in assuming that there are not very real and intangible values in a university which are difficult to define and quantify. The critical mass of scientific expertise in a field, the opportunity for an interplay between different disciplines, are difficult to quantity and to accord a sufficient recognition. Do you agree with that, sir?

Dr. SCHMITT. I certainly do, sir, and, as I said in my introductory statement, having been only three years in academia after 37 years in industry, I can appreciate that intensely.

Mr. THORNTON. As my colleague, Mr. Roemer, mentioned, I left the University of Arkansas to return to Congress. There, we had a most unusual situation where Dr. Alan Herman discovered the world's highest temperature superconducting material. It still holds that record—Dr. Herman and Jingzhe Shang—and we laughed around the university that one reason the University of Arkansas had such an advantage in dealing with cold temperatures was that was that we couldn't keep our laboratories warm, and, indeed, many universities like the University of Arkansas have a very weak support base for the excellent research which may take place, and this has been a matter of great concern to a number of people.

The State of Arkansas made a terrible mistake of the kind that I hope the Congress does not make. When I first became a university president, it was to my shock that I discovered that the State

method of funding universities deducted the indirect costs received by the university from the State appropriation, which was a tremendous disincentive to any university within that State from entering into any research, because the result was that the university had to absorb the indirect costs and had the funds deducted by the State. Surely that is not the thing we need to do or to approach in our Nation.

Dr. SCHMITT. I couldn't agree with you more, Mr. Thornton. I have heard that same comment made by any number of presidents of State universities.

Mr. THORNTON. We changed that in Arkansas—

Dr. SCHMITT. Good for you.

Mr. THORNTON. —and made sure that indirect costs did become an incentive for our universities to engage in research by allowing a fair sharing of those expenses which are difficult to quantify.

Now the reason we are concerned is because, in some instances, those shares have not been fair and there have been abuses, and what we are trying to find is ways of correcting the abuses without damaging the incentives for universities to continue the partnership between science and discovery that universities in America now attain. That is what our committee is about, and I appreciate your testimony.

I would appreciate any comments or ideas you might want to share on that general question or statement.

Dr. SCHMITT. Well, I share your concern, and I think several of the comments of other members of the committee have indicated that that concern is widespread among the public. So I believe it is of the utmost importance that we address these issues quickly and take steps to reassure the public that, in fact, universities are using funds that they receive appropriately and responsibly. I have no suggestions about specific mechanisms beyond those that I suggested in my—

Mr. THORNTON. Well, the levels of fiduciary responsibility that an institution should always accord to those who participate in funding it, it would seem to me, would be very important.

Dr. SCHMITT. Yes.

Mr. THORNTON. Internal auditing—great care in negotiating indirect costs. I am concerned that that may be one area where abuses have been allowed to develop through the negotiating process, and I know that your institution is one of the finest, and we are glad to have you here, but any observations as to additional means we might employ to assure that the public is confident—

Dr. SCHMITT. One of the things I cannot advise you on is the role that these memoranda of understanding have played in the process, because, as I said in my opening remarks, at my school we have none of them, so I really am unable to illuminate the committee on what role they might have played in the aberrations that have occurred. I'm sorry that I can't enlighten you on that.

Mr. THORNTON. Well, I personally appreciate, Mr. Chairman, Dr. Schmitt and his testimony, bringing to us the perspective not only of a university administrator but from his previous experience in the private sector.

Thank you, sir.

Dr. SCHMITT. Thank you.

Mr. BOUCHER. The gentleman's time has expired. The chair recognizes the gentleman from Illinois, Mr. Fawell.

Mr. FAWELL. Thank you, Mr. Chairman.

I am a little bit confused on some of the figures here, which is not unnatural for me—to be confused by figures. As I understand it, we are talking about direct costs and indirect costs and that the percentage of indirect costs for such research assistance has been defined to be anywhere from 45 percent to as high as 88 percent. Is that correct?

Dr. SCHMITT. In the reports that I have seen, I think that is about the range that has been reported in various institutions for the nominal overhead rates as defined by OMB 21.

Mr. FAWELL. Yes. And when we are talking about direct costs, we are talking about matters like salaries, equipment, materials, travel, and, indirect costs, we are talking about items such as depreciation, security, fire protection, off-site campus, I guess, costs—things of that sort.

I am interested—the chairman had referred to three possible suppositions, one of which was that there be no indirect costs, and the gentleman from Arkansas has just made a very erudite statement based upon his experience that, don't make that kind of mistake; Arkansas did; and so forth. And yet it seems to me, when we talk about depreciation, if we can center on that, you were with General Electric?

Dr. SCHMITT. Yes, previously.

Mr. FAWELL. Business people, of course, will have depreciation as a recognized mode of accounting and cost for capital expenditures, and the concept is that, therefore, you will build a reserve over the years so that when the life of the building or of the equipment, theoretically, is ready to be replaced, you have the funds there to be able to do so. Now there's many a slip between the cup and the lip, and especially as we—just yesterday, I was traveling through a low-income housing project, and one of their great laments is that, based upon the rents they have been allowed to receive as income over the years, they simply have never put away the proper reserve, and now they are faced with capital expenditures that they can't meet.

My question is this. As a practical matter, therefore, if x percentage of the grant may be used for depreciation, then do the institutions of higher learning indeed take whatever that is and sink it into a reserve fund so that the proportion of the capital attributable to the particular Federal research program is indeed used for the purposes of ultimately using it for capital expenditure, whether it is personal property, capital equipment, and/or buildings?

Dr. SCHMITT. I cannot answer that question for every institution, Mr. Fawell, as you understand. It is my impression that the general answer to that question is no, and on my own campus I know it is no.

I hesitate to launch into a discussion of the accounting and financial systems on a campus, but let me go back to the principle of it. If you are doing things right, you should have each year a capital budget, which includes the money you are going to put into major renovations or new buildings or major pieces of equipment or whatever, and you should have in your operating budget a depreciation

account. Educational institutions, by and large, don't work that way, although I think that is the preferable way to work and that is the way in which I am taking the financial management on my own campus, I might say.

But the thing you should then look at is—or your depreciation accounts, how do they compare to your capital accounts? And that can vary depending upon the kind of business you are in. But one could tell whether, in fact, the sum set aside for depreciation matched the capital expenditures if you had an accounting system like that. It is a little bit more difficult to do the way that universities keep their financial system.

Mr. FAWELL. And this probably is due more to my ignorance than anything else, but it seems to me that what you are saying, though, insofar as institutions of higher learning are concerned, they bill the Government for depreciation on capital items. The actual purpose of equipment, capital equipment, is direct cost, so we are not including that within the indirect costs, which are seemingly so high. They bill the Government for that depreciation, but they don't do what business does or good business ought to be doing and sink it into a reserve fund so, indeed, they are utilizing it for the purposes for which the building is made.

Dr. SCHMITT. That is not quite exactly the correct description for what goes on even in industry, Mr. Fawell.

Mr. FAWELL. No, I understand. Maybe there are times you take the depreciation without being able to allocate your income into the reserve funds as you would like to do so.

Dr. SCHMITT. That is correct, but the principle of your question I think is a good question—that is, to ask the question. Let me put it a little different way. I think the question that one could ask is whether universities are, in fact, investing enough in their renovation and maintenance of their buildings and equipment, and without having done a detailed study of it myself, I can only give you my gestalt impression, and my impression is no.

Mr. FAWELL. And most everybody will probably say that, I suppose. We are not putting enough away in reserves when the day comes.

But my point is that what the Federal Government believes it is doing is giving money specifically for the purpose to aid in the three purposes to which you referred. It is giving a good chunk of money for depreciation, and that money will never be used for depreciation, it will be used for something else, and I think that is a big hole, and I think it is a good basis for us to seriously consider the fact that I wouldn't say we eliminate all indirect costs; obviously, there is some added administration involved, which I gather is part of the indirect costs also.

Dr. SCHMITT. Yes.

Mr. FAWELL. But it would seem to me that in order to avoid the pitfalls and the gray areas, we can have a lot more simplicity here. Basically, we should pay for these direct costs. Because it is a Federal contribution, I suppose it can be likened more to a contribution coming from any source in regard to which certainly no institution will say, "Well, thanks for the contribution, but, by the way, we have got a lot of indirect costs in order to be able to fulfill the specific trust, let's say, conditions of the contribution. You should

give us more to cover the depreciation of the buildings that we will have to use," and so forth and so on. Nobody does that.

I question whether we should be doing it in Federal grant programs where we want to get certainly the most bang for the buck and see that that money is used for the specific purposes for which it is intended. And, therefore, it would seem to me a great deal of simplicity can occur if we go simply with the direct costs, with administration added into that, and we are going to be adding about half a trillion dollars in new debt this year. We have to borrow every penny we give you for our children to repay, and I seriously question whether depreciation ought to be something that the Federal Government is involved in here, because it just isn't anything that anybody in the institutions of higher learning are putting that money away and spending for that purpose anyway.

Dr. SCHMITT. Well, I would caution, so as we said earlier what—if I understand you correctly, what you are suggesting is, it may be better for the Federal Government to make direct grants for renovations and buildings and things like that rather than handle it by depreciation.

Mr. FAWELL. I wouldn't necessarily go that far. It may be appropriate at a given time, but I would think the direct costs, the salaries and the—yes, I would say the capital personal property equipment might be very necessary for the research—educational research to take place.

When you get into real estate, there are certain basic, ongoing expenses which any business, whether you are in the business of education or in the business of selling cars or in the business of operating a low-income project, those buildings and that depreciation and the overall expenses of operating it are going to be there. And for us to get into those kinds of indirect expenses, it would seem to me that there would be a lot of question in my mind about that.

If you simply said, we will cover a grant for salaries, for the basic equipment that is necessary to operate this, but we are not going to get involved in the whole depreciation schedules of the various buildings, many of which may be 100 and 160 years old and things of that sort. That is not basically our business—our business is to grant to enable you to operate this educational program.

Dr. SCHMITT. Well, but those costs are real costs. I mean the fact that we label them as indirect costs doesn't make them any less tangible. They are tangible costs that a university incurs.

Mr. FAWELL. But you say you never put them into a reserve account and you never expect to use them for that anyway.

Dr. SCHMITT. No, I didn't say that we never expect to use them, I'm sorry.

Incidentally, I did this exercise on my campus recently, to relieve perhaps some of your concern about that. Over the past three years, I have been making substantial modifications in the financial accounting and reporting Rensselaer's campus uses. I am afraid you are forcing me into a few comments on another area that is arcane, but the whole business of academic accounting is not, in my opinion, attuned to letting you manage the institutions well, to make trade-offs between things that are more important and less important and to look at productivity and things of that sort.

I have been modifying substantially our own financial system. One of the things that did relieve me a bit is that, after having done this over three years, I was able to cast the operating and capital budgets at my institution into the more common business format, and, in fact, I learned that—I mean I had always been very concerned about the very point you are making—namely, we didn't have a depreciation line in our operating expenses.

I succeeded in doing that, and, in fact, it turned out not to be too bad because of the fact that a lot of the things that you would normally depreciate in a business you pay for in the current year in a university. In other words, it is same year depreciation, if you like. The balance between what we were spending on capital and our depreciation looked okay. I didn't know that before, and I think that is the question you are raising. I would like to see that at other universities also. I suspect the situation is not quite as bad as you and I might believe it is.

Mr. FAWELL. Thank you very much. I appreciate your testimony.

Mr. BOUCHER. The chair thanks the gentleman and recognizes the gentleman from Illinois, Mr. Bruce.

Mr. BRUCE. Thank you.

First, Dr. Schmitt, Stan Eichenberry sends his best.

Dr. SCHMITT. Thank you.

Mr. BRUCE. And, secondly, we are running out of time, so just one brief question. At your institution, do you have a panel that reviews indirect cost requests before they are billed, and does anyone take a look at what is being billed, and, if there is a question, is there a secondary office that takes a look at that?

Dr. SCHMITT. With your permission, behind me I have Mrs. Virginia Gregg, the comptroller of my institution. I haven't had to refer to her for any previous question, but, unfortunately, for that one I am going to have to turn to her, with your permission.

Mr. BRUCE. I would be happy. Bring her along.

Dr. SCHMITT. May I have her answer the question directly, Mr. Chairman?

Mr. BOUCHER. We would be pleased to hear from her.

Could you please state your name for the record?

Mrs. GREGG. Yes. My name is Virginia Gregg. I am the comptroller at Rensselaer. And, to answer your question as to whether indirect costs are reviewed, if there is a committee that reviews them: we do have staff within my office that review transactions as they are processed for allowability to various accounts, and, to back up, we use an account structure to try to direct costs into either allowable or unallowable categories.

We do review—in my office, I have separate staff that also prepare and review the indirect cost proposal. On occasion, we have our internal audit function review it. It is reviewed in general now by our auditors although not the way it will be reviewed during the compliance audit testing which we are starting to do this year.

So we don't have a committee, per se, which was your first question; it is an interesting idea; but I think that ve do have checks and balances to make sure that we are conforming with the system as best we can in a cost effective fashion.

Mr. BRUCE. Would the lead researcher then make a proposal to you for approval of indirect costs? Is that the way it would operate?

Mrs. GREGG. No. The researchers would more look at the direct costs. The indirect costs are more managed centrally.

Mr. BRUCE. Then who would file your proposal for indirect costs with your office? You said there was a filing for that. Who would have signed that or requested it?

Mrs. GREGG. I think I may be confusing the issue. Again, we calculate our indirect cost rate centrally. That would be the rate that we calculate and negotiate with our cognizant audit agency, which is DHHS [Department of Health and Human Services], is the average rate that we would apply to all of our proposals. Our principal investigators do not negotiate or calculate individual indirect cost rates, nor do they submit indirect cost charges; that is a centrally derived average rate we apply.

Mr. BRUCE. Okay. Let me ask you just one question then. If you want to pay country club dues for a specific member of the administration, how would that be done? Is it done—just generally, we think that country club dues is an indirect cost of running a university, so we will amortize the cost of that, or does someone submit something that says we ought to include this as indirect costs? That is what I am trying to figure out. How do you make that determination of what is an indirect cost for research bases?

Dr. SCHMITT. To my knowledge, we don't pay country club dues at Rensselaer Polytechnic.

Mr. BRUCE. Well, I thought about using the commode, but I thought that would probably be—

Dr. SCHMITT. We don't do that either.

Mr. BRUCE. I was trying to find something a little bit more neutral than silverware or anything else.

Dr. SCHMITT. I think your question is, in cases where the expense may be one that the institution regards as a legitimate expense but the Federal Government does not regard it as legitimate. Is that basically the question?

Mr. BRUCE. That is the question. What internal process do you have that would answer that question within the Office of the Comptroller.

Dr. SCHMITT. Okay. Do you have the answer to that question?

Mrs. GREGG. Yes, I do.

We would exclude that centrally based on our interpretation of A-21, the rules that govern what can go into research and what cannot. There are charges—certainly not country club dues—that we may elect to pay because we view it as vital to our educational activities, but we would preclude that charge from hitting our research accounts either direct or indirect.

Mr. BRUCE. Okay.

I thank the chairman. I understand we are under a time problem here. Thank you.

Mr. BOUCHER. The chair thanks the gentleman and expresses particular thanks to Dr. Schmitt for taking this very lengthy time this morning to inform us of his views and to answer our questions.

It is always a pleasure to have you before this subcommittee.

Dr. SCHMITT. Thank you, Mr. Chairman.

Mr. BOUCHER. The chair now welcomes the second panel of witnesses for this morning comprised of the Honorable Kevin Moley, the assistant secretary for management and budget of the Depart-

ment of Health and Human Services, the agency which negotiates rates at most of the universities; Rear Admiral William C. Miller, the chief of naval research; that agency negotiates rates at 39 universities, including MIT, Stanford, and Cal-Tech; and Mr. Fred J. Newton, the deputy director of the Defense Contract Audit Agency, which audits the universities, the rates for which are negotiated by the Office of Naval Research.

Gentlemen, we welcome you here today. Without objection, your prepared statement will be made a part of the record, and we would appreciate your orally summarizing that statement and adhering to the subcommittee's five-minute rule for oral statements.

Mr. Moley, we will be pleased to begin this morning with you, sir.

STATEMENTS OF HON. KEVIN E. MOLEY, ASSISTANT SECRETARY FOR MANAGEMENT AND BUDGET, DEPARTMENT OF HEALTH AND HUMAN SERVICES, WASHINGTON, D.C.; REAR ADMIRAL WILLIAM C. MILLER, CHIEF OF NAVAL RESEARCH, ARLINGTON, VIRGINIA; AND FRED J. NEWTON, DEPUTY DIRECTOR, DEFENSE CONTRACT AUDIT AGENCY, ALEXANDRIA, VIRGINIA

Mr. MOLEY. In the interests of time—and I understand you have a number of questions certainly for us, obviously—I will make very brief remarks.

As you know, Mr. Chairman, just yesterday the Office of Management and Budget announced some changes to Circular A-21. However, those of us in the Department of Health and Human Services think probably the most important paragraph in Director Darman's statement was the third paragraph which says—and I quote—"The proposed modifications represent the initial step in a broader administration effort to develop more comprehensive reforms. This effort is examining possible changes in reimbursement policies for administration facilities and equipment."

I go further and say that Director Bernadine Healy—Dr. Healy of the NIH [National Institutes of Health], myself, and Dick Kusserow, the inspector general of our Department, have met last week, have been meeting with OMB officials, as well as our staffs have been in consultation with them, and we have a broader, longer-range effort under way, and, if there is one thing that I would like to try to impress, it is that although this topic has been under discussion both by the Congress and ourselves and others for a long period of time, going back through the entire last decade and before, we would hope that before we come to a legislative remedy, if you will, that we, at least within the Department and others, have an opportunity to conduct this broader look-see, if you will, because our instructions from Dr. Sullivan are to look at this issue from ground zero—that is, to make sure that whatever changes we make are not merely a short-term fix but have a long-term application and are viable for far into the future, and, on that note, I will conclude my oral statement, Congressman.

[The prepared statement of Mr. Moley follows:]

STATEMENT

BY

KEVIN E. MOLEY

ASSISTANT SECRETARY FOR MANAGEMENT AND BUDGET
DEPARTMENT OF HEALTH AND HUMAN SERVICES

BEFORE THE

SUBCOMMITTEE ON SCIENCE
COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

TUESDAY, APRIL 23, 1991

Mr. Chairman and Members of the Subcommittee:

I am Kevin E. Moley, Assistant Secretary for Management and Budget.

I am pleased to be here to discuss my office's role in indirect costs. This subject is of particular importance to the Department since indirect costs represent almost a third of the total costs of the Department's research grants. Additionally, from a broader perspective, we are responsible for negotiating indirect cost rates on behalf of all Federal agencies for the vast majority of colleges and universities receiving Federal research funds. HHS therefore has a major role in assuring that the indirect cost process works effectively.

General Nature of Indirect Costs and Indirect Cost Rates

I hope that some general background information on indirect costs will be useful.

Indirect costs (also called "overhead") are the costs institutions incur for administrative and supporting services which cannot be identified to individual research projects or other programs. Although these costs cannot be identified to specific programs, they are nonetheless allocable to certain operations of the institution and the performance of its programs.

Typical examples of indirect costs include the salaries and expenses of the institution's top management; financial and administrative services, such as accounting, purchasing and facilities; depreciation on buildings and equipment; etc.

Federal programs pay a share of the institution's overall indirect costs. The amount is determined by a cost allocation process that measures the portion of the indirect costs that are allocable to Federal programs. The end product of this process is an indirect cost rate. For example, if an indirect cost rate for research programs conducted by a university is 50% of total direct costs, this means that for every dollar of direct research costs the university receives it also receives 50 cents for the indirect costs allocable to the programs.

OMB issues guidelines (called "cost principles") on how indirect cost rates should be negotiated and what costs are "allowable." In the case of colleges and universities, these guidelines are in OMB Circular A-21. Similar guidelines have been issued for other types of organizations, such as State and local governments and other nonprofit organizations. OMB Circular A-21 was last revised by OMB in 1986 and was initially published in 1958.

The ratio of indirect costs to direct costs was 46.4% for NIH research grants awarded to universities in FY 1990. This ratio has been relatively stable for a number of years (in 1986, it was 46.2%). In dollar terms, the indirect costs awarded to universities under NIH research grants in FY 1990 were approximately $1.25 billion. An exact Government-wide amount is not available, but is likely in the range of $2 to 2.5 billion.

Negotiation of Indirect Cost Rates

With that as background, I would now like to discuss how indirect cost rates are computed and negotiated.

In addition to the government-wide cost principles established in A-21, OMB has also established a system for review and negotiation of indirect cost rates with universities. Under this system, each university is assigned to a single Federal agency which performs the function. The agency responsible for this function is referred to as the "cognizant agency." The resultant indirect cost rate that is negotiated is then used by all Federal agencies. As I noted earlier, HHS is responsible for most of the institutions, although some of the major schools, such as Columbia, Stanford, and MIT, are assigned to the Department of Defense.

Negotiations of the rates are based on indirect cost proposals the institutions submit to the cognizant agency. These proposals detail the allocation of each indirect cost component to the institution's major functions--primarily, research, instruction and public service. Then the total amount of indirect costs allocated to the research function is divided by the direct costs of the research to compute the indirect cost rate. For example, if $12 million of indirect costs are allocated to the research function, and the direct costs of the research are $20 million, the indirect cost rate would be 60%. Similar computations are made to determine the indirect cost rates for the other functions of the institution.

The indirect cost proposals submitted by the institutions are reviewed and negotiated by the cognizant agency. HHS' system for doing this involves a staff of cost negotiators located in Washington and in our regional offices. They specialize in reviewing and negotiating indirect cost proposals. All of our negotiators are professional accountants, and the senior people who handle the larger cases have many years of experience in evaluating and negotiating indirect cost rates. The reviews of proposals from the major institutions frequently involve a site visit to evaluate certain aspects of the proposal on-site, and, in some cases, may involve an audit of the proposal.

The negotiations are conducted with financial officials of the institutions, such as the controller or vice-president for finance. Most of the negotiations ultimately result in an agreement on the rate between the Department and the institution. If an agreement cannot be reached, the Department will issue a unilateral notice and the institution would then have the right to appeal under our appeals regulations. The final administrative appeal authority in HHS is our Departmental Appeals Board. If the Board rules against the institution, it has the right to go to Federal court; but this is rarely done.

Improvements to Current System

The basic process for determining indirect cost rates has evolved over a number of years. As with any system, there are areas where improvements could be made. In this regard, the Department has initiated several actions to strengthen the current system.

First, at the request of the Secretary, Dr. Bernadine Healy, Dick Kusserow and I have jointly formed a top level working group to examine the cost of research. Prime among our focus areas is the entire spectrum of indirect costs issues and their relation to direct costs and the ultimate cost of research as directed by the House and Senate Appropriations Committee for FY 1991. The new NIH Director is reviewing a draft cost management plan. Our work on indirect costs will complement that effort.

Second, increased audits of indirect costs will be made by both Federal and non-Federal auditors. The Department's Inspector General has a number of audits and reviews of indirect cost underway. These focus on an institution's cost proposals and support the indirect cost negotiation process. As part of this effort, the IG will audit individual expense transactions to ascertain the extent of problems similar to those found at Stanford. Also, OMB has guidelines currently under development which will require non-Federal auditors to give further emphasis to this area.

Additionally, over the past few years, we have initiated a number of improvements to the Department's indirect cost negotiation operation. These initiatives include:

- A consolidation of our negotiation offices;
- The issuance of a comprehensive guide for evaluating university indirect cost proposals;
- The use of special team reviews of proposals from certain major institutions; and
- The use of specialized consulting services to assist the negotiators in their reviews of certain technical aspects of proposals.

The consolidation of our regional negotiation offices is expected to significantly strengthen the negotiation activity since it will provide a broader level of expertise in each office. This

is needed to effectively handle the wide range of cost proposals the negotiators are required to review and negotiate. This consolidation was announced in 1989 and will be fully implemented by the end of this fiscal year.

The guide for evaluating university indirect cost proposals was completed last summer. It further refines and directs the special team reviews which were begun in 1986. Both are also designed to strengthen the quality of the reviews and negotiations conducted by the negotiators, especially for the larger, more complex cases.

Finally, we are in the final stages of contracting for specialized consulting services to assist the negotiators in evaluating certain technical areas that impact on the allocation of indirect costs. Services are being sought for actuaries, statisticians and engineers. For example, the use of engineering consultants will strengthen our scrutiny of studies allocating utility costs between research laboratories and classrooms.

That concludes my prepared statement Mr. Chairman. I hope it was useful to the Subcommittee and will be glad to respond to any questions you may have.

Mr. BOUCHER. Thank you very much, Mr. Moley.

Admiral Miller, we will be happy to hear from you.

Admiral MILLER. Yes, sir. Thank you, Mr. Chairman. I appreciate this opportunity to testify today before this committee.

I also will abbreviate my remarks, because they are a summation of my testimony for the record. I would just like to point out that the Navy has been an active participant in, and strong supporter of Federally-sponsored research for almost 45 years, tracing its involvement organizationally back to 1946, when the Congress created the Office of Naval Research [ONR] with a mission—and I quote—"to plan, foster, and encourage scientific research."

One year after its establishment, this fledgling ONR negotiated with the Nation's universities the first formal set of principles for determining and reimbursing applicable costs associated with Federally-sponsored research. These principles embodied three important features: first, the university had to justify any costs claimed for reimbursement; and, second, certain costs were not allowable; and, third, full recovery of all allowable research costs was permitted.

In 1958, these principles were embodied into then Bureau of the Budget Circular A-21 entitled "Cost Principles for Educational Institutions," and that laid the foundation for what is now the Office of Management and Budget regulation in this area, Circular A-21 as we know it.

In my opinion, there appears to be general agreement among both university and Government administrators that Circular A-21 embodies a basically sound set of cost principles. However, strong differences exist with regard to implementation of those cost principles in practice on the university campuses. These differences derive primarily from differing interpretations of the principles and the resulting variation in the extent to which universities are allowed to recover costs that they believe they have encountered in support of Government-funded research.

Differences notwithstanding, the Navy and the Department of Defense remain committed to reimbursing universities for all substantiated costs that are reasonable, allowable, and allocable to Federally-sponsored research.

A detailed description of the negotiation procedure that ONR uses with the universities is contained in my statement, and we could get into that in the questions and answers, if you desire. But, looking at the process, taken together, the provisions of OMB Circular A-21, knowledgeable oversight by Federal representatives on university campuses, supported by adequate and timely audits, constitute the framework the DOD [Department of Defense] has espoused for identifying indirect costs that are reasonable, allowable, and properly allocable to Federally-sponsored research.

Unfortunately, when the framework is inadequately implemented, as has been witnessed at Stanford University over the last several months, there exists an environment in which errors and abuses can go undetected. The Stanford issue, I can assure you, is being resolved, and ONR and DCAA [Defense Contract Audit Agency] are reviewing internal controls at other universities under DOD cognizance both to ensure that similar problems have not

been replicated elsewhere and to strengthen our oversight procedures.

Mr. Chairman, I firmly believe that competent administration of existing procedures by ONR contract administrators, supported, as I said, by timely, adequate audits, will identify and prevent many of the problems experienced on the Stanford campus. On the other hand, I also believe that the system can be improved, and I fully support the recent action by OMB initiating a full review of Circular A-21. I believe such action is healthy; I believe the dialogue will result in a better system.

Any progress in simplifying the rules, eliminating ambiguities, while still providing for an equitable allocation of research costs, would be welcomed by the Government and university administrators alike.

One Office of Naval Research initiative that may help alleviate problems related to the workload on Federal audit agencies is the University Coordinated Audit Program. I was pleased to hear the remarks of Dr. Schmitt this morning with regard to OMB Circular A-133, because the University Coordinated Audit Program is based on Circular A-133 and is designed to increase audit efficiency, lower demands upon Federal manpower, and increase the timeliness of audits on the campuses.

I do not believe that the system will work without timely audits. We must have that Government introspection of the costs that are being allocated to the Government. I recommend the University Coordinated Audit Program to the subcommittee's attention as a mechanism to ensure that sort of oversight by the Government.

Regarding the issue of rising indirect cost rates, much of the increase that we have seen over the last 10 years has been related to facilities costs, as this committee has mentioned in their earlier questioning. That investment in state-of-the-art research facilities, while expensive, directly supports our national goal of maintaining preeminence in science and technology, a goal that is recognized and firmly supported by the executive branch.

The President's fiscal year 1992 budget, for example, notes that adequate research facilities and equipment are essential to the effectiveness of research efforts. The budget report explicitly recognizes support of academic research facilities through indirect cost recovery; and, clearly, research costs must be fully documented, but universities, in the DOD's belief, must be permitted to recover these costs if the United States is to maintain its scientific and technological edge.

Mr. Chairman, that concludes my opening statement. Thank you, sir.

[The prepared statement of Admiral Miller follows:]

NOT FOR PUBLICATION UNTIL RELEASED BY THE
COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY

STATEMENT OF

REAR ADMIRAL WILLIAM C. MILLER, USN

CHIEF OF NAVAL RESEARCH

BEFORE THE

SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY

OF THE COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

ON

INDIRECT COST RATE NEGOTIATION AT COLLEGES AND UNIVERSITIES

23 April 1991

NOT FOR PUBLICATION UNTIL RELEASED BY THE
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY

REAR ADMIRAL WILLIAM C. MILLER, USN

CHIEF OF NAVAL RESEARCH

RADM Miller became the 17th Chief of Naval Research on June 15, 1990. A native of Los Angeles, California, RADM Miller is a 1962 graduate of the U.S. Naval Academy. He was promoted to the rank of Rear Admiral in 1990.

After his first tour of duty aboard the destroyer USS DUPONT, he attended graduate school at Stanford University where he earned Master of Science and Ph.D degrees in electrical engineering.

Subsequently, he served on the guided missile cruiser USS GRIDLEY and the guided missile destroyer USS SAMPSON, and commanded two ships: the frigate USS McCLOY and the destroyer USS CUSHING.

His assignments ashore have included: service on the personal staff of the Chief of Naval Operations; project officer at the Office of Naval Research; member of the Electrical Engineering Faculty and later Executive Assistant to the Superintendent of the United States Naval Academy; Executive Assistant to the Assistant Secretary of the Navy (Shipbuilding and Logistics); Director of Low Observables Technology in the Office of Navy Technology; and Commanding Officer of the Naval Research Laboratory.

He assumed duties as Director, Undersea and Strategic Warfare and Nuclear Energy Development Division in the Office of the Chief of Naval Operations in August 1987. Subsequently, he served as the Deputy Director for Research and Development Requirements, Test and Evaluation within the Office of the Chief of Naval Operations before becoming Chief of Naval Research.

As Chief of Naval Research, RADM Miller manages the R&D organization responsible for the conduct of the basic research, exploratory development, and advanced technology development programs of the Navy. He also exercises policy oversight for the Navy's laboratories and R&D centers. The organization's annual budget, over $1 billion, is allocated for research and development work conducted at universities, Navy laboratories and in industry.

RADM Miller reports directly to the Secretary of the Navy via the Assistant Secretary of the Navy for Research, Development and Acquisition. He is the Navy's Science and Technology Executive and ranks organizationally with Deputy Assistant Secretaries of the Navy. Organizational entities reporting to the Chief of Naval Research include the Office of Naval Research (the first federal research funding agency), the Office of Naval Technology, and the Office of Advanced Technology, all located in Arlington, Virginia, and associated laboratories and field offices: the Naval Research Laboratory in Washington, D.C.; the Naval Oceanographic and Atmospheric Research Laboratory at the Stennis Space Center, Mississippi; and overseas offices in Tokyo and London.

Rear Admiral Miller's personal awards include the Legion of Merit, three Gold Stars in lieu of the second, third, and fourth Legion of Merit, the Meritorious Service Medal, the Navy Achievement Medal, and several campaign and service medals. He is a twenty-year member of the Institute of Electrical and Electronics Engineers.

Rear Admiral Miller is married to the former Barbara Jean Leach of Burbank, California. They are the parents of five children: Linda, William, Julie, James, and Marianne.

REAR ADMIRAL WILLIAM C. MILLER
CHIEF OF NAVAL RESEARCH
TESTIMONY BEFORE
UNITED STATES HOUSE OF REPRESENTATIVES
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

23 April 1991

Mr. Chairman and members of the Committee, I appreciate this opportunity to testify before this Committee on indirect cost rate egotiation and contract administration of federally sponsored research at colleges and universities.

As perhaps you know, the Navy was the first government agency to espouse the need for federally sponsored research, stemming from our reliance upon research and development during World War II. In fact, the funding of basic research at the nation's universities by the Federal Government has its roots with the war-time Office of Scientific Research and Development (OSRD), which mobilized the scientific community in support of the war effort. "R&D" was very effective, and made many contributions -- the most striking being the development of the atom bomb. Science was so important to the successful conclusion of World War II that Winston Churchill called it "the wizards war."

Toward the end of the War, Navy officials were concerned that the war's end would result in the demise of wartime agencies such as OSRD, and thus limit the benefits to the Navy of university-based scientific research. A then very influential Congressman, Carl Vinson, shared the Navy's concerns. While others debated the concept of establishing a national science foundation in 1946, Vinson pushed through a bill creating within the Department of the Navy an Office of Naval Research (ONR), to ... "plan, foster, and encourage scientific research..."

The Navy, through its newly created Office of Naval Research, continued the mission of OSRD and quickly moved to reaffirm its relationships with university scientists. In 1947 ONR negotiated with universities the first formal set of principles for determining and reimbursing applicable research costs based on a university's actual costs. These principles had three important features:

- o costs had to be justified.
- o certain costs were not allowable.
- o full recovery of all allowable research costs was permitted.

In 1958 these Navy principles were revised and issued as Bureau of the Budget **Circular A-21, "Cost Principles for Educational Institutions."** Although revised several times since 1958, and currently issued by the **Office of Management and Budget (OMB)**, also as **Circular A-21**, these principles remain the paramount federal guideline for negotiating and administering federally supported university-based research.

While there has been general agreement among university financial officers and agency grant administrators that Circular A-21 embodies a basically sound set of principles, differences do exist in its interprsetation at different universities. The principal differences are in the degree to which allowable costs for conducting research for the government are recovered.

Circular A-21 permits universities to recover the full amount of indirect costs attributed to research: the university infrastructure such as buildings, the cost of administration of research, and maintenance. The concept of indirect cost recovery is generally accepted by Congress, OMB, and major federal science agencies; but there are historic differences at universities over the degree to which they seek indirect cost reimbursement. Circular A-21 provides a formula for calculating indirect costs. If actual costs are in excess of the amounts derived under the formulas, universities may develop special studies that document the additional costs. Thus, indirect cost rates vary from university to university depending upon the quantity and quality of the infrastructure devoted to research and the university's efforts in identifying and documenting indirect research costs beyond the standard formula.

Mr. Chairman, with this background on the Navy's involvement with federally sponsored research, let me say that I believe that, fundamentally, existing law and federal regulations, supported by timely and adequate audits, do provide the requisite mechanisms to identify, control, and ensure proper accountability for federal research funds at universities. The Navy and the Department of Defense strongly support the principles established by ONR in 1947, as revised, and are committed to funding all allowable and substantiated costs of university research, both direct and indirect. Clearly, research costs must be fully documented, and universities must be permitted to recover these costs if the United States is to maintain its scientific and technological edge.

Rising indirect cost rates and recent reports of overcharging by universities has called into question our administrative procedures for federally sponsored research, and the cost principles established by OMB. Let me comment on those issues:

<u>First, administrative procedures:</u>

The Office of Naval Research (ONR) University Business Affairs

Directorate has two principal functions: contract and grant Administration and indirect cost negotiation and audit resolution.

CONTRACT ADMINISTRATION

The ONR staff administers approximately 11,000 Department of Defense, NASA, and DOE research contracts and research grants with 390 colleges, universities and non-profit organizations. These grants and contracts had a cumulative value of some $14 billion dollars of which $8.5 billion are active contracts or grants. In general contract administration involves approvals as may be required by contract or grant provisions, government property administration, daily processing of vouchers for payment as research work is completed, record keeping, and contract and grant closeout. Additionally, ONR conducts contractor procurement and property system reviews in accordance with federal acquisition regulations.

INDIRECT COST NEGOTIATION AND AUDIT RESOLUTION

The Office of Naval Research (ONR), acting for the Department of Defense; the Department of Health and Human Services; and the Department of Energy are each assigned responsibilities for overhead rate negotiation and audit resolution at various universities. These functions are conducted on behalf of all Federal agencies under a "cognizant agency" concept established by the Office of Management and Budget (OMB).

Schools assigned to ONR are as follows:

Alaska, University of
Brown University
California Institute of Technology
Carnegie-Mellon University
Charles Stark Draper Laboratory, Inc., The
College of Lake County
Colorado School of Mines
Columbia University
Cornell University (Endowed Colleges)
Cornell University (Medical College)
Cornell University (Statutory Colleges)
Dayton, University of
Denver, University of
Emmanuel College
Georgia Institute of Technology
Hawaii, University of
Illinois, University of, at Chicago
Illinois, University of, Urbana-Champaign
Massachusetts Institute of Technology
McMaster University
Metalworking Technologies, Inc.

Miami Valley Research Institute
National Academy of Sciences
New Mexico Institute of Mining & Technology
New Mexico State University
Notre Dame du Lac, The University of
Pennsylvania State University
Polytechnic Institute of New York
Regis College
Rhode Island, University of
Rochester, University of
Southeastern Center for Electrical Engineering Education
Smithsonian Institution
Stanford University
Stevens Institute of Technology
Syracuse University
Toronto, University of
Virginia Institute of Marine Science
Virginia Military Institute Research Laboratories
Wentworth Institute of Technology
William and Mary, The College of
Woods Hole Oceanographic Institution
Wright State University

MANAGEMENT AND PROCEDURES

A staff of 108 civil service personnel are assigned to these functions under two regional field offices, one located on the east coast in Boston, Massachusetts; and the other on the west coast located in Monterey, California. These field offices have Resident Representatives serving schools under their jurisdiction operating from field sites, often on university campuses. Resident representatives are located in Boston; New York City; Chicago; Columbus; Washington, D.C.; Atlanta; Los Angeles; La Jolla; Stanford; Berkeley; Albuquerque; Seattle; and Austin.

These Resident Representatives are responsible for both contract administration and indirect cost negotiation. The audit responsibility for schools under ONR cognizance is assigned to the Defense Contract Audit Agency (DCAA), which performs audits as requested by the Resident Representatives.

Office of Naval Research procedures for indirect cost negotiation have been made more rigorous as one result of current concerns about cost allocations and reimbursements. A new management guide has been established and is being provided to all field representatives.

In brief, our system adopted by ONR operates as follows:

Annually, universities submit a cost proposal for indirect costs to be charged to federally-sponsored research based on their forecast of costs to be incurred for such items as: building and

equipment depreciation, operation and maintenance costs, general and administrative costs, library costs, student services, and fringe benefits for salaries associated with sponsored research programs. Their cost proposal is audited by DCAA and audit findings are submitted to the Resident Representative for his use in conducting rate negotiations.

Following negotiations, a fixed (but not final) indirect cost rate is set for the fiscal year. This rate is applied to all federal agency sponsored research at that school for the fiscal year period.

At the completion of the fiscal year, the university again submits a cost proposal based on actual costs incurred during that year. Again, the proposal is audited by DCAA auditors who are responsible for verifying the cost claims submitted by the university and for validating that costs claimed are allowable, reasonable, and properly allocated to sponsored research. The audit findings, particularly any costs that are questioned, are provided to the Resident Representative for use as a basis for negotiating a final indirect cost for that fiscal year.

Differences between the initial fixed rate and final rate could mean either that the university was over or under reimbursed. Such an amount, either over or under, is used as a "carry forward" consideration in establishing the initial fixed indirect cost rate for the succeeding fiscal year.

This process of two negotiation cycles for each rate period--which involves proposal submissions, audits, and negotiations--is known as a "fixed-with-carry forward" method. One cycle is for the forecast of the fixed rate and the other is for determining the actual rate and carry forward amount.

Taken together, the provisions of OMB Circular A-21, oversight by federal representatives on university campuses, and timely audits, constitute the framework for identifying indirect costs, that are allowable, reasonable, and properly allocable to federally sponsored research. While that framework and our procedures alone will not prevent errors, they do provide a sound basis for determining cost reimbursement of research at educational institutions.

Second, the issue of rising rates: Much of the increase in indirect costs rates at the Nation's universities in recent years results from university investment in state-of-the art R&D facilities. That investment in facilities supports our national goal of maintaining preeminence in science and technology. A goal that is recognized and firmly supported by the Executive Branch. The 1991 Budget of the United States notes, "...The Administration will continue to examine a wide range of options for

increasing the level of national investment in state-of-the-art R&D facilities, in particular, the implementation of OMB Circular A-21, 'Cost Principles for Educational Institutions' to ensure that it provides incentives for academic institutions to invest in R&D infrastructure, and that R&D dollars are accounted for adequately."

The President's fiscal year 1992 budget also notes that adequate research facilities and equipment are essential to the effectiveness of research efforts--"collectively an enterprise that supports the search for basic understanding of nature, the mission of government agencies, the improvement of industrial products and processes, and the training of future generations of scientists and engineers." The budget report explicitly recognizes support of academic research facilities through recovery (via indirect costs) of use and depreciation charges..."which represent a considerable, and continuing, investment in academic research facilities."

Third, the issue of overcharging by universities: One school, Stanford University, has been the focus of much press attention in recent months. The situation at Stanford is not the result of an inherent flaw in the cost principles for educational institutions, but rather a result of inadequate implementation of those regulations at that school and from an absence of timely and thorough audits.

In establishing indirect cost rates, the government relies first upon universities to identify and allocate costs that are research related, and second upon federal auditors, to ascertain that actual indirect costs attributed to research are allowable, reasonable and allocable. As noted earlier, Mr. Chairman, standards and principles alone will not prevent errors of judgement or in accounting, nor serve as a substitute for a sense of what is an allowable and reasonable charge, properly allocated to a federal research program.

At Stanford University, the responsibility for overcharging is under review, but it is probable that faulty internal controls and flawed judgement contributed to various unallowable charges which have been reported. But also at Stanford, the government shares responsibility for these problems due to inadequate implementation of its own procedures for oversight. I firmly believe that better administration of existing procedures by ONR contract administrators, together with timely and adequate audits by DoD's Defense Contract Audit Agency (DCAA), would have identified and prevented many of the problems now being documented by auditors at Stanford.

The business problems at Stanford have highlighted the need for a closer and more effective relationship between Office of Naval Research field representatives and the regional field offices of the Defense Contract Audit Agency. The Navy and DCAA are now working closely together at Stanford and at other DoD cognizant

universities on indirect cost issues. The Director of DCAA, Mr. William H. Reed and I have discussed this matter and anticipate a strengthened relationship between our two agencies in the future.

One initiative that may help alleviate the problems in obtaining timely, adequate audit support for the conduct of business negotiations is the University Coordinated Audit Program (UCAP). This program was initiated in 1989 by the Office of Naval Research under OMB Circular A-133 to increase efficiency, lower demands upon federal manpower, and to increase the timeliness of audits. Under this program, duplicate and multiple audits are avoided by coordinating required federal, state, and university audits and allowing each audit group to rely on the work of the other under established accounting principles.

With the inception of this program, the backlog of audits at the two UCAP demonstration institutions--Massachusetts Institute of Technology and Pennsylvania State University--should be eliminated by 30 June 1991. Expansion of the UCAP initiative in November 1990 has resulted in substantial progress being made in plans for reducing the backlog of audits at twelve other institutions.

Finally, while we work through these problems, I know that I share with members of this Committee a strong commitment to maintaining an effective, productive relationship between federal research sponsors and the Nation's universities. That relationship is vital to continued U.S. economic and industrial competitiveness. But to be successful, that Government--University partnership demands two things: the Federal Government must pay its proper share of reasonable, allowable, and allocable costs incurred by universities in support of government research; and the Government, universities, and researchers must both ensure that the scarce dollars available for science are spent wisely and accounted for with the diligence that the taxpayers deserve.

Mr. Chairman, that completes my testimony, and I would be pleased to answer any questions which you or Committee members may have.

end

Mr. BOUCHER. Thank you, Admiral Miller.

Mr. Newton, we will be pleased to hear from you.

Mr. NEWTON. Good morning, Mr. Chairman and members of the subcommittee.

As you have requested, I will describe the audit procedures of the Defense Contract Audit Agency—DCAA—in auditing indirect costs of research at universities, and I will provide comments on problems encountered and possible solutions.

For the benefit of anyone desiring an understanding of the calculation of overhead expense rates and the allocation of overhead expenses to Federal contracts and grants, I have included in the first five pages of the formal statement a brief overview of Government contract cost accounting.

Regarding DCAA audit procedures at universities, our basic approach is the same as followed in audits of industrial firms. Audits are primarily focused upon systems with the idea that if a cost estimating or accounting system is adequate, the product of the system should be adequate.

The timing of audits is affected by many things. First, there must be something to audit. For example, some universities have delayed for years the submission of a certified cost statement on their overhead expenses. Also, there must be a clear understanding that an audit is going to be required. There also must be available audit resources.

While DCAA doesn't have absolute control over the timing of audits, we do exercise significant managerial control over the use of available audit resources. To make sure the resources are applied in the most efficient manner, a rather sophisticated system of risk assessment has been developed. It is not a new system, but it is constantly evolving and is revised to meet current circumstances. The same risk assessment procedures are applied in the industrial and the university environments.

DCAA audits of indirect costs of research at universities specifically address compliance with applicable regulations and any special cost provisions included in the contract or grant. OMB Circular A-21 establishes principles for determining costs at universities. These principles have been implemented in the Federal Acquisition Regulation, which is incorporated by reference in each applicable Department of Defense contract.

In November 1990, the Department of Defense established supplemental provisions making those costs which statutes render unallowable on defense contracts with commercial entities also unallowable on defense contracts with noncommercial entities. OMB has proposed a revision to Circular A-21 which would give similar treatment to defense grants and non-defense contracts and grants.

OMB Circular A-21 also includes procedures for determining cost allocability. Indirect expenses are not identifiable to a specific cost objective. Therefore, they must be grouped together and allocated to the various institutional functions and projects. To accomplish this in a manner that ensures that the Government bears only its fair share of the costs, OMB Circular A-21 establishes procedures to be used in grouping like expenses and specifies cost distribution methods which are appropriate for most circumstances.

DCAA audits of university accounting systems include analyses of internal controls established by university management to assure compliance with applicable regulations. There has been a recent development that may make performance of these time consuming audits more efficient and effective. This development is a procedure for coordination between university internal auditors and the DCAA auditors with the objective of having the internal auditors perform analyses and tests which may be reviewed, tested, and relied upon by DCAA. This procedure is called the University Coordinated Audit Program, with common reference to the acronym UCAP. There has been some preliminary success at the Massachusetts Institute of Technology and at Pennsylvania State University. Since it is the university's responsibility to comply with applicable regulations, we are hopeful that more universities will get involved with UCAP as a means of assuring compliance.

One final comment on audit procedures, which is really in defense of the audit procedures and other Government oversight activity. I have heard allegations that the well publicized overcharges by Stanford University and, to a lesser extent, by other universities are results of inadequate Government oversight. While oversight is important and is needed, it is not a substitute for effective contractor management. It is fully and completely the responsibility of the contractor, including universities, to live up to the terms of their contracts. It is their responsibility, not the Government employee, to assure that management sets a clear tone from the top that responsible and ethical conduct will prevail in all matters affecting their use of the public funds.

Turning now to comments on problems encountered and possible solutions, I will first summarize the problems. They are: one, indirect cost allocations sometimes do not pass the beneficial or causal relationship test, which is a critical element of good accounting; and, two, there is ineffective self-governance.

The indirect cost allocation problem has been primarily observed at Stanford University where there have been extensive variances from the prescribed allocation procedures in OMB Circular A-21. While the variances have been the subject of memoranda of understandings with the Office of Naval Research, they have not been supported by cost analyses as required by the circular. Also, the cognizant auditor there reports that all of the alternative allocation methods appear to benefit Stanford.

The obvious solution to the allocation problem is to require compliance with OMB Circular A-21. It requires supporting cost analysis as a condition of initial acceptance and an updated analysis at two-year intervals. No variance should be accepted unless it clearly shows that the default procedure fails the beneficial or causal relationship test and the variance is proven to pass that test.

The Department of Defense has for several years been encouraging increased contractor self-governance. It is a program prescribing voluntary procedures for improving systems of internal control. While contractors were generally slow to make commitments to participate, significant progress has been made in the past year.

I mentioned previously that a similar program, called the University Coordinated Audit Program, has been initiated at a couple of universities. We have also been seeing some positive action at

some of the universities which appears to be a direct result of the publicized problems at Stanford. In any event, more action is needed by university managers. Firm procedures need to be established, including increased budgetary controls and internal testing to assure compliance with applicable regulations. By managing the costs better, I believe they can avoid the continuation of intense public scrutiny and distrust and get on with the business of performing the research our country needs.

Mr. Chairman and members of the subcommittee, this concludes my statement. I will be pleased to answer any questions.

[The prepared statement of Mr. Newton follows:]

Statement of

Fred J. Newton

Deputy Director

Defense Contract Audit Agency

Before The United States House Of Representatives

Committee On Science, Space, and Technology

Subcommittee On Science

April 23, 1991

Not For Publication Until Released By The Subcommittee

Good morning Mr. Chairman and members of the subcommittee. As you have requested, I will describe the audit procedures of the Defense Contract Audit Agency (DCAA) in auditing indirect costs of research at universities, and I will provide comments on problems encountered and possible solutions.

To begin, I will give a brief overview of government contract cost accounting to make sure there is a common understanding of the calculation of overhead expense rates and the allocation of overhead expenses to federal contracts and grants.

In providing goods and services to the government, a contractor, whether an industrial firm or a university, agrees to account for costs in accordance with applicable regulations. Government cost accounting regulations incorporate laws, standards, and principles on cost accounting. In virtually all respects, provisions dealing with measuring and allocating costs mirror accounting concepts and practices generally accepted in business. Provisions on allowability reflect public policy and are generally unique to government contracting. Regulations require government contractors having contracts or grants for which financing or final pricing is based on costs to have a cost

accounting system capable of identifying costs by contract or grant. This is necessary to determine the total cost of performance. A contractor's accounting system must be sufficient to enable an appropriate and equitable allocation of costs to cost objectives. In contract costing, a cost objective can be a function of the organization, product, research study or project, grant, or a contract.

Costs associated with federal contracts, grants, and other sponsored agreements can be classified as either direct costs or indirect costs. In generally accepted accounting principles, direct costs are those that can be identified specifically with a particular final cost objective, or that can be directly assigned to such activities with relative ease and accuracy. For a cost to be considered direct, it must be incurred solely to advance the work or activity of a particular cost objective.

By contrast, indirect costs are those that are incurred for common or joint cost objectives, or the overall operation of the organization and cannot practically be identified with a specific product, contract, grant, or other sponsored project. For contract costing purposes, indirect costs are typically classified as either overhead (costs incurred by an operating department or center) or general and administrative (costs incurred for the general management of the organization). Components of indirect costs in the university environment are commonly grouped as follows:

-- Depreciation and use allowances,

-- Operation and maintenance,

-- Department administration,

-- Sponsored project administration,

-- Library expense,

-- Student administration, and

-- General and administrative expense.

The overall objective of the indirect cost allocation process is to distribute the costs to cost objectives in proportions consistent with the nature and extent of their use of the organization's resources. Because indirect expenses are not identifiable to a specific cost objective, they are grouped together and allocated to the various cost objectives using an allocation base which distributes costs to cost objectives in proportion to the benefits received from the incurrence of the cost. The cost objective must either cause the expense to be incurred or directly benefit from its incurrence in order to properly receive an allocation.

In accounting for overhead expenses, homogeneous costs are first accumulated by logical grouping or pool. Overhead costs are considered homogeneous if the costs included in the pool have the same or a similar causal or beneficial relationship to a cost objective.

Second, an appropriate allocation base is selected. In selecting the base, a causal or beneficial relationship must be established between the expense pool and the components of the base. In establishing this relationship, an analysis of the costs accumulated in the pool is made. For example, assume ABC University incurred total utility costs for 1990 of $1 million. An analysis of the expenses in the overhead pool reveals that the use of utilities bears a strong relationship to space. Square footage is commonly used in cost accounting as a measure of space. Where there is a causal/beneficial relationship between the utility expense pool and facility square footage of the university facilities, the selection of square footage as the allocation base would be appropriate.

Next, an overhead rate is computed. This is accomplished by dividing the total of the expense pool by the total base during a given accounting period (usually a year). The resulting rate is then applied to base amounts applicable to individual cost objectives. In our example, assume ABC University has facilities with total square footage of 10 million square feet. The resulting rate is 10 percent ($1 million of utility expenses divided by 10 million square feet).

Utility expenses would then be applied to each facility at a rate of 10 cents per square foot. If the Science Department occupies 1 million square feet, it would receive an allocation of $100,000 of utility expense.

The utility expense would likely be accumulated with other indirect expenses of the Science Department to form the expense pool for the Science Department overhead rate. Assuming for illustration purposes that analysis of beneficial or causal relationships establish a strong relationship between direct labor costs (totalling $24 million) and the expense pool (totalling $12 million), the Science Department would have an overhead rate of 50 percent. Thus, for every $1 of direct labor cost on a research project, $.50 would be added as the allocable share of overhead.

A high indirect rate does not necessarily equal high costs being reimbursed by the government. The rate merely reflects the percentage relationship of the indirect expense pool to the allocation base. In fact, a rising indirect rate may in some circumstances actually reflect an action resulting in lower total costs being charged to a contract. For example, the acquisition of an expensive automated test facility used on many projects (and allocated as indirect expense) might increase the indirect expense pool while reducing the amount of direct labor required. This would increase the overhead rate even though there is a decrease in total costs. Common business practice for justifying such an acquisition is to assess whether total costs are reduced.

Regarding DCAA audit procedures at universities, our basic approach is the same as followed in audits of industrial firms. Audits are primarily focused upon systems with the idea that if a cost estimating or accounting system is adequate, the product of the system should be adequate. This is a much more efficient approach than trying to audit each contract on a stand alone basis. Separate contract audits are just not feasible when one considers the across-the-board allocations which are involved in measuring and allocating indirect expenses.

Our audits are predicated on contractor responsibility and accountability for the cost statements. It is the contractor who must comply with the applicable regulations and submit appropriate billings to the government. The auditor's role is testing contractor compliance and providing advisory opinions to the government contracting officer.

I will emphasize here that while contractors are responsible for compliance with applicable regulations, contractors may reasonably make interpretations in their favor when the regulations are imprecise. Most exert reasonable effort toward fair interpretation; others abuse the process by not only distorting interpretation of whether provisions are flexible but also by billing for costs having no direct or indirect bearing upon contract performance. The auditors will question the abusive charges, but expensive litigation or other protracted dispute resolution processes may be required to sustain such disallowances. Consequently, constant government assessment of experience with its regulations is needed to eliminate abusive practices.

The DCAA auditor does not establish the regulations applicable to universities or other contractors. We do provide recommendations for improvements of regulations and of contractual interpretations of those regulations. I will mention some specific recommendations later in this statement.

DCAA functions as an independent contract audit organization. Its placement in the Department of Defense is expected to secure the opportunity for contract auditors to determine how the audits will be performed and to be able to express opinions based on the audits without restraint. However, DCAA does not control determinations of whom it will audit or whether an audit will be performed, nor does it have control over all factors affecting the timing of audits.

The Office of Management and Budget (OMB) determines whether DCAA or a civilian department audit organization shall have cognizance of audits at a particular university. Their determination is based on an assessment of which department has the preponderance of activity requiring audits and is published in OMB Circular A-88. DCAA has cognizance of audits at 40 universities.

Government contracting officers have some flexibility in determining whether an audit is required. For example, there have been circumstances where contracting officers have negotiated special cost allocation procedures with universities without asking for an audit of

the supporting data. When such an agreement is contractually binding, subsequent audits of cost statements from the university would merely address compliance with the special cost allocation agreement.

The timing of audits is affected by many things. First, there must be something to audit. For example, some universities have delayed for years the submission of a certified cost statement on their overhead expenses. Also, there must be a clear understanding that an audit is going to be required. When a contracting officer frequently acts without audit, there is a tendency for the DCAA audit manager not to commit audit resources until an audit request is received. This would not apply to the types of audits which are required by terms of the contracts. For example, interim billings based on costs incurred would automatically be the subject of audit scrutiny. There also must be available audit resources.

During the early 1980s many audits of costs incurred were delayed, including those at universities. Those delays were because of the rapid expansion of defense expenditures requiring high priority pricing audits without a commensurate expansion of audit staffing. The staffing shortage was relieved beginning in government fiscal year 1987 and good progress is being made in accomplishing the backlog of costs incurred audits.

While DCAA doesn't have absolute control over the timing of audits, we do exercise significant managerial control over the use of available audit resources. To make sure the resources are applied in the most efficient manner, a rather sophisticated system of risk assessment has been developed. It is not a new system, but it is constantly evolving and is revised to meet current circumstances. The same risk assessment procedures are applied in the industrial and the university environments.

To illustrate how the risk assessment system is responsive to changing conditions, let's look at a recent experience in the university environment. During the past year, DCAA became aware that problems previously observed at Stanford University were very significant in amount and may be pervasive. In October 1990, our Headquarters initiated a special risk assessment of all universities subject to DCAA audits. Based on this action, we were able to identify where assignment of audit resources were needed to assure protection of the taxpayers' interests. That has been done, and a copy of the risk assessment was provided to the Office of the Inspector General at the Department of Health and Human Services for consideration in their many audits of universities.

DCAA audits of indirect costs of research at universities specifically address compliance with applicable regulations and any special cost provisions included in the contract or grant. OMB

Circular A-21 establishes principles for determining costs at universities. These principles have been implemented in the Federal Acquisition Regulation (FAR) subpart 31.3, which is incorporated by reference in each applicable Department of Defense contract. In November 1990, the Department of Defense established FAR supplemental provisions making those costs which statutes render unallowable on Defense contracts with commercial entities also unallowable on Defense contracts with noncommercial entities. OMB has proposed a revision to Circular A-21 which would give similar treatment to Defense grants and nondefense contracts and grants.

OMB Circular A-21 also includes procedures for determining cost allocability. As I stated earlier, indirect expenses are not identifiable to a specific cost objective, therefore, they must be grouped together and allocated to the various institutional functions and projects. To accomplish this in a manner that ensures that the government bears only its fair share of the costs, OMB Circular A-21 goes beyond the FAR by establishing procedures to be used in grouping like expenses and specifies cost distribution methods which are appropriate for most circumstances.

The allocation procedures prescribed in OMB Circular A-21 are detailed guidelines for what I believe are appropriate applications of

generally accepted accounting principles. For example, the procedures call for allocating the library expense pool on the basis of primary categories of users, including students, professional employees, and other users. The procedures for measuring the library expense pool specifically exclude costs of rare museum-type books which have no value to sponsored research agreements. Thus, the OMB Circular A-21 procedure embraces the beneficial or causal relationship test which is essential to good accounting.

The Circular provides for the use of alternate distribution methods when the use of a different method results in a more equitable allocation of the costs. In my opinion, a proper interpretation of this provision is that, if the prescribed or default procedure does not fairly reflect causal or beneficial relationships to either the government or the university, an alternative procedure which meets the accounting test should be developed. The institution is responsible for demonstrating that the use of any alternative distribution method results in an equitable allocation of the costs to the government. The institution is required to make this demonstration through the use of cost analysis studies. The Circular says that:

> - the costs analysis studies must be appropriately documented in sufficient detail for subsequent review by the cognizant federal agency,

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- must distribute the costs to the related objectives in accordance with the relative benefits derived,

- must be statistically sound,

- must be performed specifically at the institution at which the results are to be used, and

- must be reviewed and periodically updated by the institution for the government; but not less frequently than every two years.

If a cost analysis study is not performed, or if the study does not show the alternate allocation results in an equitable distribution of the costs, the distribution must be made in accordance with methods specified in OMB Circular A-21. We have found instances where there were not adequate cost analysis studies in support of using alternative allocation methods.

As is the case concerning other matters affecting costs allowability, the government and institutions often document their mutual understanding of the appropriate indirect cost allocation method to be used by executing a memorandum of understanding, commonly

referred to by the acronym MOU. The number of such MOUs varies widely among those institutions where DCAA has audit cognizance. It is DCAA's policy to advise the cognizant contracting officer of any cost analysis study or MOU which the auditor believes results in an inequitable treatment or distribution of costs, or is otherwise not in the government's best interest, and to recommend revisions. When requested, this audit advice is provided to the contracting officer before the memoranda are executed. Otherwise, the advice is provided as observations are made during the routine course of audit performance.

DCAA audits of university accounting systems include analyses of internal controls established by university management to assure compliance with applicable regulations. There has been a recent development that may make performance of these time consuming audits more efficient and effective. This development is a procedure for coordination between university internal auditors and the DCAA auditors with the objective of having the internal auditors perform analyses and tests which may be reviewed, tested, and relied upon by DCAA. The procedure is called the University Coordinated Audit Program, with common reference to the acronym UCAP. There has been some preliminary success at the Massachusetts Institute of Technology and at Pennsylvania State University. Since it is the university's

responsibility to comply with applicable regulations, we are hopeful that more universities will get involved with UCAP as a means of assuring compliance.

One final comment on audit procedures, which is really in defense of the audit procedures and other government oversight activity. I have heard allegations that the well publicized overcharges by Stanford University and to a lesser extent by other universities are a result of inadequate government oversight. While oversight is important and needed it is not a substitute for effective contractor management. No amount of auditing can detect every noncompliant transaction. It is fully and completely the responsibility of the contractor, including universities, to live up to the terms of their contracts. It is their responsibility, not the government employee, to assure that management sets a clear tone from the top that responsible and ethical conduct will prevail in all matters affecting their use of public funds.

Turning now to comments on problems encountered and possible solutions, I will first summarize the problems. They are:

1. Indirect cost allocations sometimes do not pass the beneficial or causal relationship test,

2. There is ineffective self-governance.

The indirect cost allocation problem has been primarily observed at Stanford University where there have been extensive variances from the prescribed allocation procedures in OMB Circular A-21. While the variances have been the subject of memoranda of understandings with the Office of Naval Research, they have not been supported by cost analyses as required by the Circular. Also, the cognizant auditor reports that all of the alternative allocation methods appear to benefit Stanford.

The obvious solution to the allocation problem is to require compliance with OMB Circular A-21. It requires supporting cost analysis as a condition of initial acceptance and an updated analysis at two year intervals. No variance should be accepted unless it clearly shows that the default procedure fails the beneficial or causal relationship test and the variance is proven to pass the test.

The Department of Defense has for several years been encouraging increased contractor self-governance. It is a program prescribing voluntary procedures for improving systems of internal control. While contractors were generally slow to make commitments to participate, significant progress has been made in the past year. I mentioned previously that a similar program, called University Coordinated Audit

Program, has been initiated at a couple of universities. We have also been seeing some positive action at some of the universities which appears to be a direct result of the publicized problems at Stanford. In any event, more action is needed by university managers. Firm procedures need to be established, including increased budgetary controls and internal testing, to assure compliance with applicable regulations. By managing the costs better, I believe they can avoid the continuation of intense public scrutiny and distrust and get on with the business of performing the research our country needs.

Mr. Chairman and members of the subcommittee, this concludes my statement. I will be pleased to answer any questions.

Mr. BOUCHER. Thank you very much, Mr. Newton.

The chair thanks all of the witnesses for their statements here this morning.

Let me begin with a general question that relates to the standards that are set by OMB in Circular A-21 itself. In your view, does that circular, in its current form, give adequate guidance to the universities as to what costs are allowable as indirect costs, and does it give adequate guidance to you as auditors in overseeing university compliance with that circular, in its current form, unamended, not taking into account the amendments that were proposed yesterday?

Mr. Moley.

Mr. MOLEY. Let me first say, Mr. Chairman, that in our role at HHS, we are the negotiators, as opposed to the auditors. That is a function carried out by our inspector general. Having said that, clearly, the changes indicated in the OMB statement of just yesterday clarify a number of ambiguities that have existed that have obviously caused some difficulty, and I would be the first to say that these are necessary. They obviously wouldn't have been as quickly forthcoming had they not been. They do clarify a number of ambiguities, and our remaining concern is that we just want to make sure that we are covering the waterfront, if you will, in making sure that there aren't other areas that are being left untended, that we just not merely be satisfied, if you will, with a quick fix, and I think that is our major concern at this time.

Mr. BOUCHER. Would it be fair to say that in the past, though, universities legitimately could complain that the standards set in Circular A-21 have been somewhat vague, subject to misinterpretation and different interpretations by different universities?

Mr. MOLEY. I think not only could they say that but they could also say that they were subjecting themselves to some misapprehensions on the part of public perception, as we have seen in the last month. As you know, Harvard has recently come forward and indicated that, although they believed there were allowable costs in respect to university housing, which, by the way, would no longer be the case under the revisions that OMB is proposing, that they felt that the public perception of such was going to generate a lot of the kinds of publicity we have seen in respect to Stanford.

Obviously, any time an issue becomes the subject of a Herblock cartoon, you know there is trouble, and, consequently, I think, as I said, these changes and clarifications are certainly needed, and the university community does have some reason to complain, but I would agree that the rule of discretion in respect to this is—may always be the first rule.

Mr. BOUCHER. All right.

Admiral Miller.

Admiral MILLER. Yes, sir, the Department of Defense is in full concurrence with OMB's action in putting this list of unallowables. OMB is going to publish them in the Federal Register and get comments on them, of course, before they implement them; but, in fact, the Department of Defense and OMB coordinated on this list before it was published yesterday. We believe it will help in reducing the ambiguities with regard to allowables in A-21, but it is not a complete solution.

One of the problems with A-21—and I listened intently to Dr. Schmitt's description from the other side of the table—is the implementation of those cost principles at a specific university; and in dealing in the gray areas, as Dr. Schmitt said, we will still have differences, and that is why I believe that the second part of OMB's initiative, and that is to initiate an overall review of A-21, is probably more important than the list of unallowables. I think we need to get at trying to simplify and make more understandable the implementation of those rules on the campuses.

Mr. BOUCHER. So you would endorse the process that OMB is apparently now undertaking in reviewing the entire circular as opposed to just these unallowables.

Admiral MILLER. Yes, sir, very much so.

Mr. BOUCHER. Mr. Newton.

Mr. NEWTON. Your question is whether A-21, in its present form, is a problem. It is a gross problem. It is a condition where we have public policy inconsistency. We have a condition where the provisions for what is unallowable on a defense grant or a non-defense contract or grant is presently not the same as what we have applicable to a defense contract.

In other words, when you are dealing with either, as the university or you mentioned audit guidance, it is an audit problem as well as a university management problem, because it is very confusing. What is this indirect expense going to be allocable to? And is it going to be allowable or not? It is not clear. Consequently, we are very pleased to see the change that has been proposed for A-21. We think it is a tremendous step toward improving the condition, and the report here that the effort is going to go beyond just a list of unallowables but be addressing the entire subject is viewed very favorably by DCAA.

I would also look to Dr. Schmitt's testimony though and applaud the idea about a greater need for management. He also mentioned compliance auditing, which I don't think is the solution, but the factor of needing stronger management controls is certainly the thing that, if anything is going to improve our cost charging environment in the university area, it is going to take that. That is where the abuses seem to be, in really in how the things are implemented—what is the tone from the top in running the university, what is the theme that it is going to set for all of its employees as to what kind of costs they are going to incur and what kind of costs they are going to allocate to Government research.

Mr. BOUCHER. It is kind of difficult, however, don't you agree, to manage properly if you don't have adequate guidance from the top? And the top in this case has been OMB Circular A-21, which I think everyone testifying here today has indicated has been quite inadequate—and, in your statement, grossly inadequate—in terms of providing that guidance. So I am not sure that management really is at fault here. Do you have any response to that?

Mr. NEWTON. I believe that management is at fault in a situation like at Stanford, and, to give you the contrast, we have conditions at that university where things that are not gray, things that—entertainment costs, alumni support activities, which were unallowable under the A-21 are unallowable under the provisions in their present form. Notwithstanding those specific provisions, the costs

were still flowing to the Government, and now, even with effort to try to get things cleared up, there is so much rhetoric about all of the promises we hear about things being cleaned up that we are really not seeing that much action.

To contrast that, Massachusetts Institute of Technology, when the things started coming out in the papers about Stanford, they initiated their own intensive review and have come forward since the Stanford hearing with over $600,000 in credits and refunds to the Government. Management has the role here, and writing whether it is allowable or not, just itself, is not going to do it, nor is bringing in all of the auditors in the world going to do it.

Mr. BOUCHER. I recall from Dr. Schmitt's testimony this morning that he was suggesting that better auditing does have a significant role to play here and that compliance auditing would be a critical help. Do you discount that suggestion, or do you think the entire role here ought to be one of better management?

Mr. NEWTON. I don't discount it entirely. I must speak out in support of auditing. We are wonderful people. We have a valuable function, and we are proud of what we are doing in this environment. But it is not the panacea. The compliance auditing is not the thing that is going to solve it. Unless you have the tone at the top from management setting the theme as to how this organization is going to function, all the auditing in the world is not going to solve it. We have seen that in industry. We have seen it, for example, in the most publicized cases of General Dynamics; Dr. Schmitt's old company General Electric, paraded throughout the national press for problems they were in early in the 1980's. Both companies took tremendous action, self-governance action set by their chief executive officers, and have initiated programs to turn it around where now they are seen as being very strong, compliant companies. The same thing is seen in some universities but not all.

Mr. BOUCHER. Well, I think we all would have to acknowledge the misbehavior that has taken place in assigning into this indirect cost category items that are obviously inappropriate, and, you know, those were listed earlier today, they have been mentioned prominently in the press, and the OMB amendment, in fact, announced yesterday is designed to strike directly at that.

But I think there is a larger problem here too, and that is that there are many areas of grayness where a particular item could well be an indirect cost or not, depending on how the governing document, A-21, is interpreted, depending on what compliance audits for that particular university have shown in the past with respect to that similar item either being included or not, and so it would seem to me that there is a better role to be played here on the part of university management, as well as OMB in writing its circular in more defined terms, and the auditing agencies in performing these compliance audits. Would you agree?

Mr. NEWTON. I agree, but I would have to emphasize one point about the compliance auditing that—it was being referred to by Dr. Schmitt. Under the new provisions, Circular A-133 providing, it involves the university's own internal auditors and their independent CPA firms to get involved in the compliance auditing, and I think that that is very important—all of the audit activities, internal, the

independent externals employed by the university as well as the Government auditors be involved in it.

But in order for it to be really effective, there has to be sharing. Now there is good example seen of sharing between the internal auditors and both the external CPA firms and the Government auditors. But we are really apprehensive about whether A-133 is going to be very successful until the independent CPA firms are willing to step up and truly be independent and be willing to disclose the details of their reviews and their findings to the Government auditors.

I met last week with representatives of the American Institute of CPA's in an attempt to get that organization to be supportive of this kind of coordinated audit activity in the defense contracting environment in total. They are very reluctant to agree to anything that would be even supporting training sessions on this subject of how you can get together and do compliance reviews, sharing the results, sharing the findings and how you have arrived at those findings, so that we can make a determination as to whether we can rely upon them.

We cannot, for example, have a university tell us that, "Everything is okay: We have looked at it, and it is fine," or, "Our independent CPA firm has looked at it, and it's fine." The Government auditor is going to have to have the opportunity to be able to look at the tests that have been performed and make independent assessments on whether they are credible and can be relied upon.

Mr. BOUCHER. So, to put that statement in a nutshell, you are concerned about either not having access to the outside audits that are obtained of the university from outside accounting firms under the university's own contract with those accounting firms, or you have some question about the validity of those audits because of the fact that it is a firm contracted by the university. Does that fairly summarize your concern?

Mr. NEWTON. Our primary concern is being able to see whether the tests are performed sufficiently where we can rely upon them, and the auditing standards for which the independent CPA firm has to comply with—which are the same as ours, by the way—provide for reliance upon the work of others. In order to do that, one must look at the work. One doesn't just look at the conclusion and say, "All right. You have found it is okay. We will accept it." You examine the work and determine, on your own behalf, whether you can accept that as sufficient evidence to render an independent opinion yourself on the matters being reviewed.

Mr. BOUCHER. Have you had trouble getting access to that work, the work done by accounting firms for universities?

Mr. NEWTON. Yes, sir, we have.

Mr. BOUCHER. Why are you having that trouble? What are the universities saying when you ask for the material?

Mr. NEWTON. Well, at Stanford University we have not been able to get the review records, and they have gone out and hired a very large CPA firm, consulting firm, Arthur Andersen and Company. We have asked to see their details of their work out there, and we have not been able to get it.

Mr. BOUCHER. Have you received a flat refusal from the university or just a delay in providing the information? Tell me what is really at the basis of this. Is the university just not cooperating?

Mr. NEWTON. I think they are not cooperating. We have a meeting going on today between the lawyers for our agency and the lawyers of that university, trying to iron out access to records issues such as this, and we are getting both types. As far as the CPA firm reviews, we are not getting that at all. What we are getting for the university records are many delays in being able to gain access. They tell us that they are going to be cooperative, and what they are doing is going out and hiring people. They bragged recently about having hired nine people to assist DCAA getting the records. We ask for a record, and then, some time later, after they have found it and looked at it and whatever it is they want to do about it, it finally comes into the office. We just can't work effectively in that manner.

Mr. BOUCHER. Is this an isolated example, or is this part of a pattern where the universities for which you have auditing responsibilities similarly are uncooperative in providing information to you that was obtained by their outside auditors?

Mr. NEWTON. It is not a pattern. We have very favorable activity, as I mentioned, at Massachusetts Institute of Technology and Penn State University. Both of those two, which are major activities where we are involved in audit, have been quite cooperative, and including their—as I understand it, we have had access to the CPA work at MIT.

Mr. BOUCHER. Now how many universities are you responsible for?

Mr. NEWTON. Forty.

Mr. BOUCHER. For forty all together.

Mr. NEWTON. Yes, sir.

Mr. BOUCHER. Now, out of that group of 40, how many examples of the kind of lack of cooperation in getting this auditing information that you have spoken of with regard to Stanford have you experienced?

Mr. NEWTON. I don't have an enumeration of the degrees of activity. Stanford is certainly at the far end of the spectrum, and they stand out from the group. We have had delays. I am not aware of any flat-out refusals, but I am not personally aware of the specific conditions of situations where there have been requests and where there have been delays in that. I have been apprised that generally there are conditions of delays, particularly with all of the public concern about the materials, but specifics of the other universities, I really don't have that information with me today.

Mr. BOUCHER. Now Circular A-133 promulgated by OMB is designed to address auditing at universities. Tell me just a little bit about the structure of that. Is it that circular that requires outside audits? Does that circular impose any requirements on your agency with regard to auditing? Generally, how is it directed? Is it for outside auditing, or for you, or for both?

Mr. NEWTON. If I might describe how it functions in a nutshell, the circular is encouraging the university to have the compliance auditing done, done as an internal act either via use of its internal auditors and incorporating the independent CPA's involved in it.

The DCAA's role in that kind of environment would be to look at what they have to coordinate the planning of the audits, be involved in that planning process, to assure that matters are being covered, and, to the extent that they are covered, by the internal or their CPA firms, and, to the extent that we are able to review and find that we can arrive upon it, that we would do so. The circular does not place any restraints on DCAA doing additional testing if we consider it appropriate.

Mr. BOUCHER. You have described the problem at Stanford in terms of your inability to get the information from their outside auditors, the actual work they have done as opposed to just their conclusions. Circular A-133, I understand, has recently been revised by OMB. I think the latest revision was in 1990. Will, in your opinion, that revision of the circular by OMB solve this problem? Will it place appropriate requirements on the university to share the kind of information with you that you need?

Mr. NEWTON. When it first came out and there were discussions taking place in general and particularly with our experience at MIT, I was very optimistic about it, but after having a meeting, as I mentioned, last week with the American Institute of CPA's on the sharing of work, where we were posing to them that we would open up our audits to them, let them come in and perhaps be able to cut down on the cost of audits to companies, which would include universities, by looking at internal controls that we have performed, they might be able to save some time and cost to the contractors there. They were very reluctant to support any kind of effort, even a training effort of talking about how we might be able to do it. I could not gain their support.

So at this time I am not very optimistic about that element of A-133. It is supposed to be there. The way it is supposed to work is, we would be able to examine what it is they do, and I guess the proof in the pudding is going to be able to see the actual experience. So it is just brand new. I really can't say to what extent the actions are going to be.

Mr. BOUCHER. Are these revisions to Circular A-133 effective today?

Mr. NEWTON. Yes.

Mr. BOUCHER. They are. And so, in theory, the accounting firms and the universities are operating under the revised Circular A-133 at the present time.

Mr. NEWTON. Yes.

Mr. BOUCHER. And you are still having difficulty in getting from the university the auditing material that you need.

Mr. NEWTON. We are not auditing that current at all of the universities. We have the two pilot projects that I mentioned at MIT and Penn State, and there the actions are coming along pretty well; we are gaining the access to it. As far as all of the other universities, we are not in a current enough audit mode for me to be able to say whether there is going to be an adequate implementation of A-133 or not.

Mr. BOUCHER. Well, you have certainly flagged an area that I think we want to follow closely, and I think what you are suggesting to us is that Circular A-133 may not be adequate to ensure that

you get all the information that you need, and time will tell. How much time do you think we will need to tell?

Mr. NEWTON. I expect we will be seeing during the course of this calendar year.

Mr. BOUCHER. Okay. I have one other area of questions, and then I will yield to my colleagues.

For Mr. Moley and for Admiral Miller, when your agencies negotiate an indirect cost rate with a university, do you simply use the previous year's rate as the base, or do you seek a verification for the actual costs that the university incurred during the previous year?

Mr. MOLEY. Mr. Chairman, we do use the base year in respect to those negotiations, but we often have or would like to have or, in fact, have an agreement now from our inspector general to have audit support to respect to those negotiations so that we can ferret out those things that, for instance, Harvard has just come forward with in a couple of instances, where clearly costs were unallowable, and in some other areas, as has been indicated, they chose voluntarily, even though they believed the cost to be allowable, that they were certainly no longer viable within public perception.

By virtue of my memo to our inspector general of March 21, we now have agreement that we will receive audit support for those negotiations that we believe is adequate to the task.

Mr. BOUCHER. I do have a follow-up, but let's hear from Admiral Miller first.

Admiral MILLER. Yes, sir. The Department of Defense uses a different negotiating procedure than HHS with regard to universities, and, in those universities under the DOD cognizance, we get an indirect cost rate proposal from the university as a basis for negotiating the rates. We ask DCAA to audit that proposal, and in that audit of the proposal they would also take into consideration the past practices of the university and the cost incurred in the past as part of the audit of that, and then that audit and their proposal becomes a basis for negotiating a fixed rate for the forthcoming year.

But then there is a second half of the DOD procedure, in that, after the year is completed, the university proposes a second time, based on their actual costs, and we have DCAA go back and audit actual costs, and then the accounts are balanced, if you will. If they have over- or under-collected, based upon the difference between their initial proposal and their actual costs, then those costs are reflected in the subsequent negotiations of rates.

Mr. BOUCHER. So you do take into account the actual costs.

Now, how do you arrive at those actual costs? Is there an annual audit for each of the universities?

Admiral MILLER. There has to be an audit of the proposal in order to do it right. One of the problems we have found at Stanford is, our negotiator on campus was not getting the audit support, legal review, and opinions and advice from other agencies, like HHS, before he showed up at the negotiating table; and so he was not properly prepared to represent the Government's interest in negotiating those rates.

Mr. BOUCHER. Well, I am not sure I heard the answer to the question, though. Do you actually have an annual audit at each university for which you have responsibility?

Admiral MILLER. Not a complete audit of the entire university, and I would defer to the DCAA to answer it in detail because, in fact, DCAA does do the audits in support of those, but it is not a complete audit of everything, it is a sample audit to look for areas of risk and then dig into those that appear to be of higher risk.

Mr. BOUCHER. So you do something that is on the order of a sample audit every year for every university for which you have authority. Is that correct?

Admiral MILLER. I defer to Mr. Newton, sir.

Mr. BOUCHER. Mr. Newton, maybe you could enlighten us a bit.

Mr. NEWTON. Mr. Chairman, the audit approach that we take is a system approach. We will do audit testing of the estimating and accounting systems of the university, and this will include sufficient transaction type testings across the board to be able to render an opinion on the fairness of cost statements that are taken from those records by the university and presented to the Government for various purposes, whether it be the negotiation of an individual contract or setting rates for the year ahead or setting final rates after a year is over.

We do attempt to do sufficient testing overall to be able to render an opinion on all of the rates that have a bearing on Government contracts.

Mr. BOUCHER. And so you are making an effort to verify the actual costs that the university has incurred as opposed to simply having the agency take the negotiated rate for the previous year and work from that in determining the rate for the current year.

Mr. NEWTON. Well, it is not really that straightforward. What we are looking at is the application of the applicable regulations and any specific contract provisions that have a bearing on the measure of costs.

For example, there are a number of circumstances where the Government contracting officer has entered into what is called a memorandum of understanding, commonly referred to by the acronym MOU, where a deviation from the allocation procedure which is set forth in Circular A-21 is agreed to between the university and the Government contracting officer.

Now when we are coming along and auditing the actual costs, we are auditing compliance with that MOU as far as the allocation of cost. That may or may not be actual costs in the opinion of the auditor.

Mr. BOUCHER. Do you believe that the system you have in place for sampling the costs, for lack of a more descriptive term, is adequate to give your agency assurance that the costs that are actually being stated by the university as their indirect costs were, in fact, appropriate and incurred?

Mr. NEWTON. Generally, yes, sir.

Mr. BOUCHER. Well, let's just take a case in point, Stanford. When was the last time that your agency audited Stanford prior to the current round of hearings and publicity concerning Stanford University? When did that last occur?

Mr. NEWTON. The audits at Stanford have not been performed up until the last year. We started doing a considerable amount of multiple year auditing, and we have been doing that very extensively, trying to bring it up to a current level.

But over the years at Stanford, there were conditions where the MOU type of allocations were being negotiated without audit input, that we were not asked to do an audit, so we did not do an audit there.

Mr. BOUCHER. Let me pause right there then. So, in view of the fact that your agency was not doing audits at Stanford, that would necessarily mean, would it not, that the negotiation of rates by the agency for Stanford, the indirect cost rate, would depend not upon any real verification of their actual costs but just upon what their rate was the previous year? Am I correct in that?

Mr. NEWTON. The rates were being negotiated based upon information that the then contracting officer was receiving from the university for negotiation process. There was no audit verification taking place, and the contracting officer was apparently, as best we can figure, giving trust to the information coming to them by the university.

Our audit later, though, would be involved in going in and looking at the incurred cost, and providing recommendations on those incurred cost statements that would eventually be submitted by the contractor at final settlement of contracts.

But, again, our audit would have to be addressed to implementation of those special allocations that were agreed to, as to how you measure the cost, assuming those agreements are contractually binding.

Mr. BOUCHER. Well, what I am hearing you saying is that you were not auditing Stanford with respect to its indirect cost expenditures. Why not?

Mr. NEWTON. We were not auditing for a number of years because in the early 1980's there was a—a condition existed where there was very much of an increase in expenditure in defense contracting without a commensurate increase in audit staffing.

As I mentioned previously, we use a risk assessment procedure for determining where we allocate available audit resources. We were using that approach in allocating our resources to high priority pricing effort. Effort in order to get the new contracts awarded required a great deal of effort.

Beginning in fiscal year 1987, staffing relief came to us, and since that time we have been able to go back to the backlog of these cost-incurred audits and begin to get caught up. In the case of Stanford, it is going back quite a number of years, so back throughout—nearly throughout the eighties, doing all of those audits at one time, and that has been what has been taking place.

Mr. BOUCHER. So let me try to summarize that, and correct me if I don't state this correctly. What you are saying is that your agency has had more auditing responsibility, in total, than you have had resources to discharge, and, for that reason, you have employed a risk assessment procedure that takes into account the relative risk of fraud or other misappropriation of funds or misallocation of costs at the various agencies that you are responsible for auditing, and you have seen universities as being fairly low in risk,

and I guess perhaps there would be another problem, and that is that maybe in the total scope of your responsibility in terms of dollar amount, their contracts may not have been as large as some of the others. Is that a fair statement altogether?

Mr. NEWTON. No, sir.

Mr. BOUCHER. Please correct me.

Mr. NEWTON. The risk assessment procedure is applied across the board in determining the allocation of our resources. Now we were not behind just at Stanford University, or having backlogs in universities; we have had a tremendous backlog across the board in all of the activities we audit. Industrial firms were in a similar condition.

The risk assessment was that, as an auditor, one can do the audit later of costs incurred. As long as the records are going to be retained, you can go in and do an examination of it, provided that you do tests of those things which are time sensitive, and we did program resources to be able to go in and test things like labor timekeeping in plants where that is a significant factor in the accumulation of costs. But we would backlog all of the other work, all of the voucher examination, the sample of transactions, and so on, until such time as we would have an opportunity to come back and review it. The risk assessment there was that we would be able to go back and we would be able to get the money, and that is what we are doing.

But that condition was not unique to the universities. They were not backlogged because of being any different than any other contractor.

Mr. BOUCHER. So you did not see the universities as being of a lower risk generally than the other agencies you were responsible for auditing in terms of misbehavior and whatnot.

Mr. NEWTON. That is correct.

Mr. BOUCHER. Okay. I misunderstood.

How about the rank of these contracts with universities in dollar size as compared with other contracts that you were responsible for auditing? Did you give them a lower priority because the contracts were not as large?

Mr. NEWTON. No. We gave the same priority to contracts. We considered dollar value wherever the activity is as one element of determining significance and elements of risk. We use the same staffing formula in both circumstances, industrial firms and universities, and dollar values, contract values, are given a similar consideration in both applications.

Mr. BOUCHER. Do the universities get a lower ranking in terms of your priority for conducting audits because the contract sizes tend to be smaller?

Mr. NEWTON. On the same basis as an industrial firm which would have small dollar contracts, yes.

Mr. BOUCHER. Well, is that actually the case with regard to your agency? Do the universities tend to rank lower? I mean you are telling me generically that, if they do, then they would rank lower. Tell me if they, in fact, rank lower.

Mr. NEWTON. They do, in fact, rank lower than the industrial firms that we audit, generally speaking, yes, sir.

Mr. BOUCHER. Mr. Moley, I guess just one additional question for you, sir. Most of this discussion has been focused on ONR and its auditing agency. At HHS, is the system any different? Do you actually rely on actual costs to a greater extent than appears to be the case here for determining the indirect cost rate for a current year?

Mr. MOLEY. I don't think so, Mr. Chairman, but let me just make it clear. As you know and as I have said earlier, I don't have the audit responsibilities, our inspector general does, and, as you may know, Dick Kusserow takes second place to no one in his reputation as a junk yard dog in ferreting out fraud, waste, and abuse.

Having said that, we have come to a recent agreement to increase his audit activities in support of our negotiations. We have some 118 universities with which we have major contracts—excuse me—major grant awards of over $6 million a year. We would like—to have complete coverage, you would have 40 audits; that is, you do one-third of them; you do one each year; and we believe that would produce 100 percent effect, if you will, in combination with the requirements of A-133, which requires them to have an internal audit, or will require them to have an internal audit, once every two years.

Having said that, our agreement is to have 20 audits a year—in other words, covering half of them. We believe that will provide a sentinel effect, in combination of the audits themselves and the universities not knowing who is to be audited—that that will provide a sentinel effect to ferret out the kinds of problems that have come to public attention.

Having said that, the inspector general, in preparation for this type of question, has given me some information that he has conducted some 2,052 audit type activities since 1988 in this area of universities and grants. Now I believe most of those are probably sampling kinds of audits, et cetera, as has been alluded to by DCAA, but I would have to refer you to the inspector general for the specifics.

Mr. BOUCHER. He hasn't given you any information about the number of complete audits that he has conducted, has he?

Mr. MOLEY. No, I don't believe I have that.

Mr. BOUCHER. Okay.

Do you share the concern that Mr. Newton has expressed with regard to the auditing activities under ONR about your agency getting access to the outside audits that are conducted for universities?

Mr. MOLEY. I have had numerous discussions with our inspector general over the course of the last month or two on this whole area, Mr. Chairman. That has not come up. I will certainly bring it up.

One thing I might add is that, although we have A-133 in place, which requires the internal audits, of which we spoke, once every two years, and I would defer to Mr. Newton on this, but I understand that the compliance supplement—that is, exactly all that is entailed in conducting those audits—has not yet been completed. That might be an area for input in respect to OMB Circular A-133 where we could have some input in respect to that, but, not being an auditor, as I said, I would have to defer to others for their expertise, sir.

Mr. BOUCHER. I would appreciate having a response from HHS with regard to that question in some detail. If you could go back and collect the information, it would be extremely helpful to us.

I have one additional question of you, and that relates to some suggestions which were made by your inspector general when he testified before the Energy and Commerce Committee during the earlier part of April. In particular, he had said that there were a number of areas that Congress and the administration might look to in terms of some reform of the indirect cost recovery process.

Among other items, he had mentioned a cap on rates perhaps approximating the average of indirect cost rates today, which is something on the order of 51 percent. He had also suggested that there might be some subdivision within caps, if not over the general category at least perhaps with regard to administration expenses.

He had also suggested the making of grants directly to principal investigators, leaving essentially to the university and its PI's [Principle Investigators] the negotiation of an indirect cost recovery.

He had suggested that various agencies that negotiate rates might want to take into account the differences among disciplines in the utilization of general university-wide facilities which might lead to a different rate for a different discipline.

I wonder if you could comment on whether it is the intention of HHS to implement any of those proposals on its own and whether you think those proposals should be commended to this subcommittee for its consideration.

Mr. MOLEY. Mr. Chairman, I was with the inspector general a week ago today when he made these suggestions, or made available these ideas, in his testimony, and he and I have had conversations about them as well as with our new director of the NIH, Dr. Bernadine Healy, and they will certainly be among those things we take up in our further discussions about further areas to reform or look at in respect to it.

But I think what Dick was trying to do, and I don't like to speak for him directly, but it is my understanding that he was trying to lay out the universe of ideas as he saw them that might be areas for further inquiry, that not any of them specifically or even taken together should represent an idea of total reform, but that they were certainly ideas that had come up over a period of time. Certainly we have heard about a cap since—most recently in 1986 when OMB and ourselves and others came forward with that idea. I think a lot of these ideas have to be explored in much greater detail.

Mr. BOUCHER. That was the precise answer I expected, I might say.

That concludes the chair's questions.

The gentleman from California, Mr. Packard.

Mr. PACKARD. Thank you.

Mr. Newton, how did the problems at Stanford—how were they uncovered?

Mr. NEWTON. They were uncovered primary as a result of the activity of a new ONR resident representative, a Mr. Paul Biddle, taking a very aggressive action on audit recommendations that have been around and input that he had from our auditors, and he

showed a very enthusiastic attitude toward implementation of audit recommendation, and that generated more enthusiasm, if you will, on the auditors to be forthcoming and working closely with that individual.

Mr. PACKARD. So the ongoing audit system did not really—what role did they play in uncovering it?

Mr. NEWTON. We had voiced concerns about some of the special allocation methods in communications over the years. While we were not a party to the audits—auditing them and setting the rates, there were observations made from time to time that were communicated, and Mr. Biddle seemed to take these up out of the in basket and go to work on them.

Mr. PACKARD. Was Mr. Biddle in your department?

Mr. NEWTON. No, sir. He works for ONR.

Mr. PACKARD. ONR—what is that?

Mr. NEWTON. Pardon me? I didn't hear you.

Mr. PACKARD. What agency is that?

Mr. NEWTON. Office of Naval Research.

Mr. PACKARD. Office of Naval Research; thank you.

Why wasn't the auditing procedure, which is the procedure to monitor and to correct or to uncover those kinds of problems—why wasn't it involved? Why didn't it contribute to the discovery?

Mr. NEWTON. The largest amount of dollars of concern at Stanford have been in the allocation area, as opposed to the more publicized transaction—individual transactions associated with alcoholic beverages and so on. Our auditors were concerned about the special allocation procedures, but since there was negotiated a memorandum of understanding with the university, executed by the university and the Government contracting representatives, the auditors believed that they had to perform whatever audit that they would do in consonance with that contractual understanding. So they did not believe that they had much of a position to be able to take exception to allocation procedures.

For example, the allocation of library costs: we believe that the method that is being used is allocating $9 million a year of excessive library cost to the Government following that particular procedure. Now they are able to audit that sort of thing, but, again, we have not been going in and doing all the transaction testing of the system as a whole for quite a number of years because of the staffing shortage that created a backlog.

Mr. PACKARD. Then what changes are being made or have been made to change that system so that auditing will be able to do what it is designed to do?

Mr. NEWTON. Beginning in fiscal year 1987, we were given increases in our staffing, some significant increases, and we have trained those new people, and they are out now working, performing audits, including at Stanford University.

Mr. PACKARD. Will that enable your department to comply with Circular A-133 where the audits are to be performed at least every two years on all of the institutions that you deal with?

Mr. NEWTON. We will be able to comply with the DCAA responsibility of auditing the costs that are being charged to the Government. We believe we will be able to get current there as a result of

the staffing that is presently available. We have allocated resources to be able to do it, and we are working on that, yes, sir.

Mr. PACKARD. Admiral, what has the response of your department been to the Stanford discoveries? What have you done?

Admiral MILLER. What we did when Mr. Biddle first came forward with his illumination of the very difficult problem that we had at Stanford—my initial reaction was to task my inspector general to go out there and determine the nature of the problem. And I wanted to be able to not only determine the facts, but put them face up on the table so everybody could look at them; because this was a problem that I told my IG—my inspector general—and my entire staff, "We're going to solve this problem in the light of day." And that inspector general report came back to me in January of this year and has been made public.

In December, as the IG was collating, and had begun to write his report, it became clear from discussions with him and his team that I couldn't wait until I had his final report. And so I established a Special University Team of senior negotiators and attorneys from headquarters and auditors from my own staff, my internal control officer from my own staff, augmented by our local representative on campus, Mr. Paul Biddle, who was previously mentioned; and that team was sent out there to address the very serious problems we had from the ONR standpoint.

I can tell you that DCAA stepped up very readily to the task and augmented their own team, and, last time I had a count, they had more than 20 auditors on campus at Stanford University. Because DCAA and ONR both recognize that we have a substantial backlog of business that we are going to have to work off, essentially the whole decade of the eighties, we are going to have to go through hand over hand, and we will have that level of activity on the campus.

But beyond Stanford's campus, I directed that the Office of Naval Research go back and redraft their entire procedures manual, because in looking at the implementation of A-21 on Stanford's campus, none of us were happy with it. But it was my opinion that the guidance that we had given our representatives in the field, who are put in very responsible positions, that that guidance had not been adequate. And so we have completely revised our procedures, required much greater headquarters visibility into agreements that occur out at the universities; and that new procedures manual is now being reviewed by the Navy secretariat to ensure that it is going to comply with an overall Navy standard. And, finally, DCAA and ONR, separately but in partnership, have conducted risk assessments on all of the other universities under DOD cognizance, looking at whether we have a similar problem on other campuses. And I can tell you, while we found areas of concern, we found nothing like what we had at Stanford. And so, while we are increasing the Government oversight on all campuses, I think my own opinion is, we don't have another Stanford out there.

Mr. PACKARD. Have you negotiated new indirect cost rates with Stanford?

Admiral MILLER. That is going on right now, and we are in the end game of negotiating with Stanford right now for this year.

Mr. PACKARD. Are you getting full cooperation from Stanford?

Admiral MILLER. The cooperation with Stanford I think was described by Mr. Newton. Stanford has a lot of lessons to learn. They have gotten in some bad habits, I think, over the last 10 years with regard to what is acceptable levels of cooperation. They may think they are giving us the levels that we want, but, as Mr. Newton pointed out, he and his auditors don't believe that they are getting the timely responses they need to support our negotiators.

It is going to be a hard lesson, and we are going to have to make sure that Stanford understands that they are not going to be treated any differently than any other university; but they are going to be required to justify every cost that they want to allocate to Government research.

Mr. PACKARD. It was mentioned that MIT, and Penn State, and maybe there's others, too, that are reviewing their own—internally reviewing their own policies and procedures of the past and, on some instances, are actually making reimbursements to the Government based upon at least what they perceive as public perception, if not—but not admitting any guilt.

That leads some of us to believe, however, that there perhaps are infractions in other institutions that may not be as gray—as serious as Stanford's but certainly in the same direction. Universities normally, or no institution normally would refund money unless they felt that they may be treading—so that the uncovering of the Stanford situation has certainly put other institutions on notice, and they are doing serious introspection. I would assume that there are, therefore, some problems that need to be reviewed in other areas. Is that being done?

Admiral MILLER. Yes, sir. We will find problems, but what we also found the universities doing, as Dr. Schmitt said earlier this morning, was pulling costs back that they believe are allowable but may be in a gray area; and they don't want to risk the same degree of public exposure they have seen for Stanford. So they are doing both, and I think they are taking a very conservative approach to allocation of costs right now to the Government. And I think that is healthy.

You mentioned MIT and Penn State. I believe what distinguishes those two universities mostly is, they are the two universities that were the demonstration universities, if you will, in the University Coordinated Audit Program; and the fundamental tenet of that audit program is that DCAA, for example, for the DOD, would get their audits current and then we would work with the university, State auditors if it is a State university, with their own independent audits, and with DCAA and Federal auditors to share work papers and to agree on who was going to audit which functions, and that is the important difference. Under the University Coordinated Audit Program, working papers are shared, and that is why we see at Penn State and MIT that that sharing has gone on.

I can tell you, we are now in negotiations to expand that demonstration to 11 additional universities in which, if we are successful in bringing them in, we will have that sort of cooperation among the audit agencies, and that is a method of keeping the audits current. And I think that is very important from the negotiation standpoint.

Mr. PACKARD. Thank you, Mr. Chairman.

Mr. BOUCHER. The chair thanks the gentleman and expresses appreciation to this panel of witnesses for their insights into this problem and also for their patience in waiting for several hours before this panel was able to testify. So, with the chair's thanks, this panel is dismissed.

We will now hear from the third and final panel this morning: Dr. Frederick Bernthal, the deputy director of the National Science Foundation, and Dr. Harry Mussman, the deputy assistant secretary for science and education of the U.S. Department of Agriculture, two agencies that make research grants, to testify about their experience with the entire matter of indirect cost recovery.

We will, without objection, make the prepared statements of these witnesses a part of the record and will be pleased to receive their oral summaries, and, Dr. Bernthal, since you were seated first and have a head start, we will begin with you.

STATEMENTS OF FREDERICK M. BERNTHAL, DEPUTY DIRECTOR, NATIONAL SCIENCE FOUNDATION, WASHINGTON, D.C., ACCOMPANIED BY BILL KIRBY, DIRECTOR, DIVISION OF GRANTS AND CONTRACTS; AND HARRY MUSSMAN, DEPUTY ASSISTANT SECRETARY FOR SCIENCE AND EDUCATION, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C., ACCOMPANIED BY JOHN PATRICK JORDAN, ADMINISTRATOR, COOPERATIVE STATE RESEARCH SERVICE

Dr. BERNTHAL. Thank you, Mr. Chairman. I will remember that principle.

I will give a very brief summary, Mr. Chairman, of the prepared statement, which you have before you, because I know that time is running short.

Let me just jump quickly to the comments that I would make, contained in my prepared testimony, on the system as it now exists, and that system is, of course, not perfect. It has been the topic of a great deal of discussion, not only here this morning, but over the past several years, attempts to reform it that go back into the last decade and probably since its inception. Recommendations for reform have come from the university community itself, independent commissions as well established to suggest ways to improve university relations with the Federal Government.

The complexity of the indirect cost issue is apparent to anyone who has spent time examining the recommendations for reform. I am unaware of any study or recommendation, however, that suggests doing away with a system that, despite its flaws and occasional shortcomings, as we have seen, performs a vital function.

So the problem that we face now, as we see it, is threefold: one, how do we quickly identify and correct any inappropriate or improper charges to the Government? Secondly, what is the best way to remove the ambiguities, simplify the procedures, and improve the monitoring of the indirect cost reimbursement system so that we can ensure that this unique and productive relationship—unique in the world, I should stress—that exists between our research universities and the Government can continue? And, finally, how do we reassure the public that their faith in Federal support of university research is well founded?

Even as we move to determine the propriety of some university expenditures that have been called into question, it is important we undertake simultaneously a broader assessment of this complex system, a system that can surely be improved.

I also want to focus for just a moment, Mr. Chairman, on the NSF itself, of course, and how we handle our own indirect cost affairs. The Foundation relies on the Department of Health and Human Services and the Office of Naval Research to negotiate indirect cost rates at colleges and universities to a very large extent of our research grant-making capability. The NSF does negotiate its own indirect cost rates with a small number of organizations for which HHS or ONR do not routinely have responsibility, and we conduct audits of these organizations on a recurring basis through our Office of Inspector General. These organizations are primarily independent, nonprofit organizations, and small businesses, and number in the neighborhood of 500.

Our policy on indirect cost reimbursement provides for universities to receive, in principle, full reimbursement of the allocable indirect costs on most research project grants because, after all, those are, too, the costs of doing research.

NSF staff and reviewers evaluate each project grant proposal on the basis of total costs, including these indirect costs. NSF program managers often negotiate bottom line award amounts with the proposers themselves.

But not all of our awards provide for full overhead recovery. For example, our Research Experiences for Undergraduates program provides an overhead of 25 percent of students' stipends based on the view that, although some additional administrative costs are incurred, a good deal of the overhead would be incurred whether the program existed or not.

During fiscal year 1990, the Foundation awarded approximately 16,000 grants supporting research in science education in educational institutions totaling about $1.2 billion out of NSF's budget for that purpose of approximately $2 billion. About 23 percent of this support represented indirect costs. Since fiscal year 1984, that percentage at the National Science Foundation has remained essentially stable at roughly one-quarter.

We will be interested in the results of the audits planned by the Department of Health and Human Services and the Defense Contract Audit Agency. In addition, I would note that ONR has recently begun sending NSF invitations to participate in their review of indirect cost proposals submitted by the institutions for which ONR has oversight. Where appropriate, we may be able to provide advice in some individual cases there.

Mr. Chairman, in closing my short remarks here, it is important to note that, in spite of the many pressures on the system, we have in this country in place a university research capability that is second to none in the world and, indeed, is the envy of most of the world. Problems may exist, and, if so, they should be eliminated and full accountability restored. It would be extremely unfortunate, however, if we were to focus our attention completely on the problems that have recently been in the news and ignore the essentially sound and demonstrably effective system of Federal support

for basic research that is now in place and has served our country so well.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Bernthal follows:]

TESTIMONY OF

DR. FREDERICK M. BERNTHAL

DEPUTY DIRECTOR, NATIONAL SCIENCE FOUNDATION

BEFORE THE SUBCOMMITTEE ON SCIENCE

OF THE

COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

UNITED STATES HOUSE OF REPRESENTATIVES

APRIL 23, 1991

Mr. Chairman, Members of the House Science Subcommittee, I appreciate the opportunity to come before you today to discuss the indirect cost reimbursement system for Federally sponsored research. As is evident from the testimony given earlier today, this is a very complex area. I commend the Committee for taking the time to try to identify problems with the current system and to examine ways to correct those problems.

The Government-University Relationship

The Federal government has been supporting basic research at universities for over forty years. The relationship that has grown out of this support has been beneficial to all involved. It has provided the government with access to the finest scientific minds in the country. It has served the public by increasing the scientific knowledge necessary to solve problems in the areas of environment, health, education, national defense, social welfare, and economic competitiveness. And it has benefitted America's universities, which have received support for faculty research, graduate education, and scientific instruments and facilities.

Over the past four decades, Federal support of university research has earned a level of public trust that is remarkable. Any actions that cast a shadow on this trust deserve our closest scrutiny. It would be unfair, however, to proceed from a small number of very public assertions of error, mismanagement, or even wrongdoing, to an assumption that the current system of Federal support for university-based research is somehow flawed beyond repair.

The indirect cost reimbursement system, as it currently exists, is not perfect. It has been the topic of much discussion and periodic calls for reform almost since its inception. Recommendations for reform have come from the university community and from independent commissions established to suggest ways to improve university relations with the Federal government.

The complexity of the indirect cost issue is apparent to anyone who has spent time examining the recommendations for reform. I am unaware of any study or recommendation, however, that suggests doing away with a system that, despite its possible flaws and shortcomings, performs a vital function.

The problem that we face now, as I see it, is threefold:

- How do we quickly identify and correct any inappropriate or improper charges to the government?
- What is the best way to remove ambiguities, simplify procedures, and improve the monitoring of the indirect

cost reimbursement system so that we can ensure that this unique and productive relationship between universities and the government can continue.

- Finally, how do we reassure the public that their faith in Federal support of university research is well-founded?

Even as we move to determine the propriety of some university expenditures that have been called into question, I feel that it is important that we undertake, simultaneously, a broader assessment of a complex system that surely can be improved. As you know, the Department of Health and Human Services and the Defense Contract Audit Agency is undertaking to audit at least 50 universities to determine the extent of problems in indirect cost accounting.

Even if there are no significant discoveries of errors or inappropriate charges, I feel that the time is ripe to take advantage of the current interest in indirect costs to look for ways to simplify and clarify the rules and provide greater uniformity across institutions. It would be premature to make firm legislative or regulatory recommendations until we have a solid understanding of the scope of the problem and the institutional context within which research takes place.

On the matter of reassuring the public of the value of Federally sponsored research, it will take a combined effort on the part of the scientific community, universities, and the Federal

agencies to repair the damage done and to demonstrate that any problems that have been identified are being addressed in a meaningful way. This is -- and should remain -- a long-term process and commitment.

The Context for Reform

It will be important to look at the context of rule-making for indirect costs. Universities are affected by decisions and policies made at the Federal and state level. In the Federal government alone, policies affecting indirect cost reimbursement come directly from Congress, from OMB, from the agencies involved in funding research, from the auditing departments within those agencies, and even from the individual auditors who negotiate the indirect cost rates. It is particularly unfortunate, however, that the controversy over indirect costs should arise now, at a time when the Federal government is under severe budgetary pressure.

Not only are Federal dollars in short supply, but universities, like other sectors, are facing increasing financial pressures. Research equipment is becoming more sophisticated and expensive. Costs to replace or refurbish facilities are increasing. Competition for top-level scientists and engineers is increasing, forcing faculty salaries to rise to keep pace.

Indirect Costs at NSF

I would like to conclude by saying a few words about NSF

indirect cost policies. The Foundation relies on the Department of HHS and the Office of Naval Research to negotiate indirect cost rates at colleges and universities. NSF does negotiate its own indirect cost rates with a small number of organizations for which HHS or ONR do not routinely have responsibility, and conducts audits of these organizations on a recurring basis. These organizations are primarily independent, non-profit organizations and small businesses, and number about 500. NSF typically negotiates indirect cost rates with ceilings for these organizations as an incentive for cost containment.

Our policy on indirect cost reimbursement provides for universities to receive, in principle, full reimbursement of the allocable indirect costs on most research project grants. NSF staff and reviewers evaluate each project grant proposal on the basis of total costs, including indirect costs. NSF program managers negotiate "bottom line" award amounts with proposers. This amount reflects the overall support level determined to be appropriate by the program director. In many cases this figure is determined by the overall funding available and the number of meritorious proposals in the particular NSF program.

Not all awards provide for full overhead recovery. NSF also seeks the most effective use of its research grant dollars consistent with its program priorities. Individual programs may require or encourage cost participation or contributions from university, industry or other sources. Such contributions may

impact all areas of cost, including university overhead in some instances. For example, our Research Experiences for Undergraduates program provides an overhead of 25 percent of student stipends, based on the view that, although additional administrative costs are incurred, much of the overhead would be incurred whether the program existed or not.

During FY1990, the Foundation awarded approximately 16,000 grants supporting research and science education to educational institutions, totalling about $1.2 billion out of NSF's budget of approximately $2 billion. About 20 percent of this support represents indirect costs. Since FY1984, the percentage has remained essentially stable.

We will be interested in the results of the audits planned by the Department of Health and Human Services and the Defense Contract Audit Agency. In addition, ONR has recently begun sending NSF invitations to participate in their review of indirect cost proposals submitted by the institutions for which they have oversight. Where appropriate, we may be able to provide advice in individual cases.

Mr. Chairman, in closing it is important to note that in spite of the many pressures on the system, we have in place a university research capability that is second to none in the world. Problems may exist, and, if so, should be eliminated and full accountability restored. It would be extremely unfortunate, however, if we were to focus our attention completely on the problems that have been

recently in the news and ignore the essentially sound and demonstrably effective system of Federal support for basic research that is now in place.

Mr. BOUCHER. Thank you, Dr. Bernthal.

Dr. Mussman.

Dr. MUSSMAN. Thank you, Mr. Chairman.

In your letter to the Department inviting us to testify here today, you specifically pointed out your interest in having the point about a 14 percent cap on indirect costs be included in our testimony, and I think that is probably the major point on which I want to spend the time during the brief comments I have. The prepared statement, of course, goes into substantially more than just that point.

At the USDA, the Competitive Grants Program—which just this year was renamed as the National Research Initiative—is probably the major granting program within the entire part of the Department that handles research funding. Although relatively small compared to the amount of funds managed by other granting foundations or institutions, it is an extremely important part of the agricultural research package which is important to our agricultural economy in this country. It is administered by the Cooperative State Research Service, which is headed by Dr. John Patrick Jordan, who is accompanying me here today and is with me in the event some questions may be raised.

The old Competitive Research Grant Program, which was started in 1978—between that date in 1978 and 1989, it operated under the control, if you will, of the Circular A-21. The rates were negotiated by the methods which have been described here this morning, and that aspect of the management was essentially handled outside of the Department.

However, in 1990 there was a 25 percent cap imposed on the indirect costs, 25 percent of the total direct costs. This, of course, raises the differentiation between what are total direct costs and the modified total direct costs that are the basis for the Circular A-21. I will not go into that. I think that has been well enough described here this morning. But, in any case, there was a 25 percent cap put on in 1990. In 1991, through the legislative process, there was a 14 percent cap put on the indirect costs.

Before talking about the impacts of these reductions that we have experienced on the Competitive Grant Program at USDA, let me just make reference to the Agricultural Research Service, the in-house research program at the Department. Reference is frequently made to the indirect costs that that agency has in operating its programs, the extensive laboratory network and numbers of people involved in the administrative program, and so on, that is involved in supporting it.

I want to point out to this group that, to try to draw from the ARS [Agriculture Research Service] numbers any kind of clear signal as to what the universities should be using as an indirect cost makes very little sense. ARS only takes into account a few of the elements that are the normal part of the indirect cost calculation for the universities. It is our contention that if ARS were permitted or required—in order to recover their indirect costs—to use all the elements that the universities do, that the indirect costs of the ARS would be more or less on a level with the average which we know to exist in the university community today. The fact is,

we are mixing apples and oranges if we attempt to use the ARS history.

Now, what was the impact of the dropping to 25 percent? This was not a serious change in what had been the past practice, because the 25 percent limit for indirect costs based on total direct costs equates quite well with roughly a 40 percent cap or limit that might be imposed on the modified total direct cost; and that, as I say, is somewhat historical in nature; the universities had no great problem with that.

The impact of the 14 percent cap with which we are living this year is hard to assess. We know that it is a substantial reduction in the level of indirect costs that are allowed, but we are not yet in a position to know just how much difference it is going to make. We solicited proposals. We are in the process of reviewing and evaluating those proposals through the peer review process, but have not as yet reached the point where we are into the negotiations with the proposing agency to arrive at some agreed upon arrangement from the financial standpoint.

We suspect that there will be those who will be reluctant to accept a grant with the limitation of 14 percent on the indirect costs based on the total direct costs of that project. We are told that a number of institutions will probably seriously consider imposing what has come to be known, at least internally, as the Purdue solution—where one grant was accepted by Purdue where the level of indirect costs was lower than what was considered appropriate by the university, and the university directed that the receiving unit make up the difference from their State appropriated funds—that they had to, in other words, eat the difference, to absorb the difference.

So we would expect that universities, if they were to follow this kind of an approach—and I am not saying they all will, but, if they were—there are cases where universities, or the receiving unit at the university which proposed the grant in the first place, might be asked by their university to absorb as much as 50 percent of the indirect costs and try to find sources other than that grant to cover them.

As a consequence, we cannot predict what kind of reaction we are going to have from the universities as far as the 14 percent level. But, based on our analysis of the ARS and recognizing that, were they to use the same elements that the universities use, there would be more comparability. We suspect that the position being taken by the universities that are urging, seeking restudying of this 14 percent requirement—we suspect that there would be merit in such an approach to rethink that whole process.

On the broader issue of the all-Federal-funded research, I think that the announcement that was made yesterday by Director Darman and which was publicized and referred to here by others on earlier panels, is exactly the way to go. We would be very, very reluctant to encourage or suggest a legislative solution to this problem. Legislation has a way of becoming very difficult to change at some point, whereas the regulatory or regulation approach through Circular A-21, or whatever form it may take, lends itself to a much more flexible, changing—can keep up with the changes as they may occur, the needs that may arise.

On that note, Mr. Chairman, I thank you. We appreciate being invited up here to talk about this issue.

[The prepared statement of Dr. Mussman follows:]

HARRY C. MUSSMAN
DEPUTY ASSISTANT SECRETARY
SCIENCE AND EDUCATION
UNITED STATES DEPARTMENT OF AGRICULTURE
BEFORE
THE HOUSE COMMITTEE ON
SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEE ON SCIENCE
APRIL 23, 1991

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to appear today on behalf of the United States Department of Agriculture (USDA). The Department recognizes the importance of efforts to review issues concerning the establishment and maintenance of procedures that will further ensure a fair and equitable distribution of the costs associated with research projects receiving Federal support.

I am accompanied today by Dr. John Patrick Jordan, the Administrator of the Cooperative State Research Service (CSRS), the agency responsible for most of the USDA extramural agricultural research programs that involve indirect costs.

The major program is the competitive grants awarded under the National Research Initiative on Agriculture, Food, and the Environment which replaced the Competitive Research Grants Program in 1991. From the inception of the Competitive Research Grants Program in FY 1978, USDA looked upon indirect costs as necessary for the conduct of research. These costs were allowed and reimbursed, when requested, up to the extent permitted by regulation and statute. Prior to FY 1990, indirect costs for these grants were charged at a negotiated rate specific to each institution. For FY 1990 a limit of was 25% of total direct costs was imposed, and for FY 1991 a cap of 14% was established.

The rationale for indirect costs is contained in the approach to charging costs to a project. All costs in support of a project may be charged directly to that project using accounting methods that separate and identify each element. Most organizations, however, find it desirable to use a pooled approach and to treat as indirect costs all those costs that are necessary to the operation of the organization in the performance of its programs, but which cannot be readily identified with a particular project.

The Office of Management and Budget Circular A-21, "Cost Principles for Educational Institutions," indicates that the Federal Government should bear its fair share of total costs, including both direct and indirect costs, as determined in accordance with generally accepted accounting principles, except where restricted or prohibited by law. Agencies are not expected to place additional restrictions on individual items of cost. Indirect cost rates vary among recipient institutions because of differences in equipment, facilities, and personnel.

Many institutions receive funding from a number of Federal agencies. To avoid confusion, duplication and conflicting directions for educational institutions receiving grants from more than one Federal agency, the Office of Management and Budget Circular No. A-88, "Indirect Cost Rates, Audit and Audit Follow-Up at Educational Institutions," directs that one agency be designated as the cognizant Federal agency that represents all agencies in the establishment of indirect cost rates for each educational institution. The agencies generally given this responsibility for educational institutions are the Department of Health and Human Services and the Department of Defense.

The cognizant agency receives an indirect cost proposal from the institution and reviews it for acceptability, and approves or disapproves the rate on behalf of all Federal agencies that may provide funds to that organization. Once the cognizant agency approves the rate, it is accepted by the other agencies. The cognizant agency is generally responsible for the necessary Federal auditing at that specific institution. Agencies that have special considerations affecting their sponsored agreements may inform the cognizant agency so that appropriate attention can be given to them in developing an audit program.

In addition, agencies or departments conduct audits themselves. The USDA's Office of Inspector General conducts Audits of the CSRS programs. These audits specifically include an evaluation of internal controls and a review of direct costs. Indirect costs are also reviewed to the extent that they are allowable or allocable to the CSRS approved projects. They are not reviewed for efficiency and effectiveness.

In summary, while CSRS recognizes indirect costs as necessary research costs, in most cases the CSRS reimbursement of indirect costs is limited or prohibited by statute. Section 639 of the Rural Development, Agriculture, and Related Agencies Appropriations Act, 1991 (Pub. L. No. 101-506), limits the availability of funds appropriated by the Act for the payment of indirect costs on competitively awarded research grants to a maximum of 14 percentum of total direct costs.

WHAT HAPPENED WHEN THE 25% (1990) AND 14% (1991) CAPS WERE IMPOSED?

One may ask why the FY 1990 cap of 25% for indirect costs on competitive grants generated only modest comment while the FY 1991 cap of 14% has brought forth substantial comment? The principal reason is that an indirect cost rate of 25% of Total Direct Cost (TDC) is approximately equivalent to an indirect cost rate of 40% based on the Modified Total Direct Cost (MTDC). (Figure 1) Thus, in FY 1990, the cap did not deter applicants and only one awardee was unable to accept a grant because of institutional requirements relative to indirect cost recovery. One institution (Purdue) required the Experiment Station to use State funds to provide the difference between the audited rate and the awarded rate.

For FY 1991, we cannot yet tell whether there is a specific impact because many institutions defer the decision until a grant is negotiated. We are informed that many institutions will adopt the Purdue procedure of requiring the awardee's unit to make up the difference.

We expect to hear more expressions of concern because at 14% TDC, the amount of indirect costs absorbed by the institution is substantial, accounting for nearly half of the auditable amount of overhead. (Figure 2). This Figure does not reflect that universities provide a number of intangible contributions in terms of a creative environment with knowledgeable scientists who contribute much to projects of colleagues. Also, among other things, the universities provide the use of already purchased equipment and facilities.

WITHIN THE AGRICULTURAL RESEARCH SERVICE

How does ARS conduct its in-house research with an indirect cost rate lower than universities charge? The answer is that ARS includes some, but not all, of the elements of expense that are part of the university indirect costs established through Federal audit.

The ARS rate is derived from only three of seven major elements of expense used by universities. (Figure 3) Were ARS to include the other four elements in its calculation its indirect cost rate would be significantly higher.

In addition to the fundamental difference in what is included in the ARS and university indirect costs, there is a second source of confusion in making the comparison. This is the difference between total direct costs, the base from which the ARS indirect cost is calculated, and modified total direct costs, the base from which the university indirect costs are calculated. Universities are required by government regulation to use a base that excludes from total costs such things as the purchase of major equipment, subcontracts, and tuition. An average of 30 per cent of the total research costs are thus excluded from the university base used to calculate indirect costs. This base is called the modified total direct cost.

ARE INDIRECT COSTS REAL?

Indirect costs are real costs of conducting research. They are as essential to the conduct of research as are salaries of research scientists or the cost of equipment and supplies. If indirect costs are not paid from projects which incur them, some other project or program will be required to cover the difference. They should be proper, efficient, and reasonably associated with the research project.

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Several published reports have made suggestions for the revision of procedures for the establishment of indirect cost rates. An example can be found in the "White House Science Council Panel on the Health of U.S. Colleges and Universities," which in 1986 recommended a fixed national rate for allocated administrative overhead.

Consistent with this recommendation, the Office of Management and Budget in 1986 initiated a proposed revision to OMB Circular A-21 which would have limited Federal reimbursement for allocated administrative overhead to 26%, the average rate for all major universities over the previous five years. The proposal also called for a reduction in the rate to 20% after a year. Following a three month public comment period, a modified version of the proposal was issued as a revision to the Circular in June 1986. This revision established a fixed allowance of 3% for the research administration efforts of faculty and department heads, which is only one component of the overall administrative overhead.

Revisions such as this are viewed as part of the change that is the natural outgrowth of our experience with indirect costs.

Mr. Chairman, this concludes my prepared testimony. I will be pleased to answer questions.

FIGURE 1

INDIRECT COST DETERMINATION

25% CAP*	OMB Circular A-21
Total Direct Costs (TDC)	Modified Direct Costs (MTDC)
Equipment, Subcontracts and Tuition Included	Equipment, Subcontracts and Tuition Not Included

*Indirect Cost recovery to University using 25% TDC is approximately the same as the 40% level (MTDC)

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FIGURE 2

ACTUAL COST OF PERFORMING THE SAME RESEARCH PROJECT
UNDER DIFFERENT INDIRECT COST CALCULATIONS

	40% of MTDC	25% of TDC	14% of TDC
Salaries and Benefits, and Supplies	$100,000	$100,000	$100,000
Equipment, Subcontracts, and Tuition Remission	$60,000(*)	$60,000	$60,000
Indirect Costs borne by:			
Federal Government	$40,000	$40,000	$22,400
University	$0	$0	$17,600
TOTAL Cost of Project	$200,000	$200,000	$200,000

* Generally excluded from MTDC calculation base except for the first $25,000 in subcontracts. This example does not have subcontracts.

FIGURE 3

COMPARISON OF UNIVERSITY INDIRECT COSTS
AND ARS ADMINISTRATIVE COSTS (OVERHEAD)

COMPONENT OF EXPENSE	UNIVERSITY	ARS
Depreciation	X	
Operations and Maintenance	X	
General and Administrative	X	X
Departmental Administration	X	X
Sponsored Project Maintenance	X	X
Library and Other	X	

The Agricultural Research Service (ARS) Administrative Costs (overhead) include only three (3) of the standard university overhead components. Other components are provided by direct appropriation to ARS and in the case of library services, funds are appropriated directly to the National Agricultural Library for this purpose.

Mr. BOUCHER. Thank you very much, Dr. Mussman, and thank you, Dr. Bernthal, for your statements and for your written statements as well.

Dr. Mussman, let me begin with you, and let me see if I correctly understand your point about the caps that have existed and now exist with regard to Department of Agriculture research funding.

There was a 25 percent cap, and I believe your statement was that, because of the way it was computed, it roughly approximated the indirect cost level and rate allowed for most other universities. Is that correct?

Dr. MUSSMAN. Prior to 1990, when the 25 percent cap was imposed, A-21 had been the rule in which the modified total direct costs were the basis for calculating the indirect cost and the rate that would be used was negotiated, as you heard described here, through HHS or ONR.

When the 25 percent cap was imposed, it applied now, or during 1990, to the total direct costs, which are generally at least a third larger than are the modified total direct costs. So that 25 percent of the total equated reasonably well with what, on average, was 40 percent of the modified total direct costs. That is the relationship I was attempting to establish.

Mr. BOUCHER. So you did not notice any dramatic change in the number of quality of applications or general university practices in shifting costs to other accounts or the like in the wake of the establishment of that 25 percent cap.

Dr. MUSSMAN. There were questions raised; there was an indication of dissatisfaction on the part of some universities, but nowhere near what we have experienced during the recent months as a result of the 14 percent.

Mr. BOUCHER. Give me some indication of what it is you are now experiencing, because that is the core of my question. I am interested in knowing what a cap that is that low might do in terms of the number of proposals that you received, quality of those proposals, and, to the extent that you are in any position to talk about it now—it may be too early, but to the extent that you are—what effect that cap might have on other university practices. Will they shift some of these costs to other Federal accounts and what-have-you?

Dr. MUSSMAN. If I may, Mr. Chairman, I would like to ask Dr. Jordan, who is accompanying me, to deal with that. They are the agency receiving the proposals, judging the quality, and so on, and in a better position to advise you.

Mr. BOUCHER. Dr. Jordan, could you state your name for the record, please?

Dr. JORDAN. Yes, sir. I am Dr. John Patrick Jordan, the administrator of the Cooperative State Research Service, United States Department of Agriculture.

Mr. Chairman, the National Initiative for Research in Agriculture, Food, and Environment yielded a 50 percent increase in the amount of funding and the variety of topics that could be addressed competitively in the United States Department of Agriculture. As a result, we anticipated a substantial increase in proposals. We have not received quite as many proposals as we had anticipated. Having said that, Mr. Chairman, I must tell you, we have received

just about twice as many as we did a year ago, and so it is a little bit confusing at the moment.

What we have so far completed is one panel on small business innovative research projects, and in that panel, in negotiating the grants, one of them has been rejected because the small business was simply unable to absorb those kinds of overhead costs.

We anticipate that there will be some more like that, plus, as Dr. Mussman has said, they will find that institutions that want the grant, if they don't have very many of these, they will try to find another way to pick up those indirect costs.

Mr. BOUCHER. When will your grant-making cycle be completed for this first year in which you are living under the 14 percent cap?

Dr. JORDAN. We will complete the panels by June, and we will make all the awards by September.

Mr. BOUCHER. If it wouldn't impose too much of a burden on you, it would be extremely helpful for us if, following those dates, you could supply a written statement to this subcommittee that basically answers the question I just posed: what the effect was of the cap, in your judgment, on the number and quality of proposals, and, to the extent that you can identify it, whether it has caused any change in behavior on the part of the universities.

Dr. JORDAN. I will be glad to, sir.

Mr. BOUCHER. Thank you.

Dr. Bernthal, a couple of questions for you. We are somewhat pressed for time this morning since another hearing begins in this room in about 20 minutes.

Have you noticed broadly any difference in the indirect cost rates that are negotiated for the universities to which your agency provides funding, where those rates are negotiated, on the one hand, by HHS, and, on the other hand, by the Office of Naval Research—any difference that you have been able to notice in those rates?

Dr. BERNTHAL. The answer is yes, and, instead of my trying to remember the exact number, I do recall that the Office of Naval Research negotiated rates tend to be somewhat higher, but I am going to turn to Mr. Bill Kirby from our Division of Grants and Contracts and ask him to give you the exact number.

Bill.

Mr. BOUCHER. Mr. Kirby.

Mr. KIRBY. Yes. My name is Bill Kirby, and I am director of grants and contracts at the National Science Foundation.

The question you are asking is—

Mr. BOUCHER. Are the rates higher basically where one agency negotiates as distinct from the other?

Mr. KIRBY. Yes. The average indirect cost rate for universities negotiated by HHS tends to run about 52 percent, while the average for the rates negotiated by ONR we estimate to be about 58 percent of total direct costs.

Mr. BOUCHER. Now you are one of the Federal Government's larger funding agencies in terms of basic research grants for universities nationwide. In your experience, can you identify any factors with respect to the various universities for which these rates are negotiated that would justify that kind of difference?

Mr. KIRBY. Factors that would tend to justify that kind of difference?

Mr. BOUCHER. Yes.

Mr. KIRBY. I am not really sure about the factors that would justify that difference because I am not an accountant and I don't negotiate indirect cost rates, but, from my understanding, the majority of the institutions for which ONR has cognizance are private universities, and, by average, those universities tend to have higher indirect cost rates.

As to what would justify those factors, I think there is probably some speculation as to why private universities cannot accept lower indirect cost rates.

Mr. BOUCHER. Is that, do you believe, the primary reason that you see 58 percent in one case and 52 in the other, because one category has more private universities, the other more public?

Mr. KIRBY. I really couldn't say.

Mr. BOUCHER. Okay.

Dr. Bernthal.

Dr. BERNTHAL. Mr. Boucher, let me just suggest one thing that we do know from our statistics, and I am sure others here would have agreed earlier today, and that is that, in the case of many State universities, because of the fact that in some cases, for example, indirect costs are required to be turned back to State treasuries—we heard another nuance on that theme earlier today—it may be true that some of the State universities don't negotiate in as tough a fashion, shall we say, as some of the private schools do, because it does not, in many cases, affect their budgets in such an immediate way.

Mr. BOUCHER. Let me ask both of you to give some thought to that question and if you can enlighten us as to any common threads beyond the mere public-versus-private character of the universities that fall respectively into those two categories that might account for these differences in the rates, that would be very helpful for us to know.

The other question I have is, do you think it might make sense to have one agency negotiate these rates as opposed to two, given the fact that there are some rather dramatic differences in the average rates that get negotiated by these two agencies?

Dr. Bernthal.

Dr. BERNTHAL. Well, we certainly would not object to a single agency being responsible for negotiating rates for those, the major portion of our grants, in fact, in those institutions which currently HHS and ONR split responsibility on. On the other hand, there is something to be said for the, quote, cognizant agency being the lead in carrying out these negotiations as a matter of policy, it seems to me, because, quite simply, they have the biggest stake. Other than that, I don't think there is any particular thing to choose from there.

Mr. BOUCHER. Okay. I was going to ask you if you would recommend that that function be centralized in either ONR, HHS, or perhaps some third agency. I think, in view of your answer, that would not be a relevant question.

Your agency, the NSF, has average indirect costs that are about 23 percent of the total support that you provide to universities. The

national average for indirect costs as a percentage of all research funding is significantly higher; it is about 33 percent. That is a very commendable record that the NSF has. To what do you attribute that lower figure, and perhaps what lesson can be learned generally from your experience?

Dr. BERNTHAL. Well, I am not sure that it is because the National Science Foundation undertakes the effort with greater diligence than the other agencies that are responsible for determining the indirect cost rates. In fact, for those institutions, primarily the smaller institutions, museums and so forth, that I mentioned earlier, nonprofit organizations, that we set rates, our rate is a fixed rate because in most cases it simply is not—and that rate, by the way, is 35 percent—because in most cases it simply is not worth the money and the effort that would be involved in trying to carry out a specific negotiation, and, as a matter of fact, that is probably a fairly good deal for the Foundation. We operate with a threshold in most cases, and any institution is free to negotiate a higher rate if they wish.

With respect to the fact that the overall percentage of our grants that goes out the door is reflected in only about one-quarter of an indirect cost burden, that simply is a consequence of the fact that we don't allow indirect costs on instrumentation grants, for example, where stipends are involved for students in our Graduate Fellowship Program; there are a number of areas like that where we simply don't allow any indirect costs to be charged, and that is simply a matter of principle, a matter of policy; and, in fact, in those cases I would recall again that we are using in the vast majority of those institutions the HHS negotiated and the ONR negotiated indirect cost rates.

It is also true that in some instances to try and make our research dollars go farther, our program officers, as I indicated in my prepared testimony, do negotiate and trade and, in some cases, try to negotiate the indirect cost rate downward.

Mr. BOUCHER. You mentioned in your statement that your managers negotiate what I believe you refer to as a bottom line award amount with proposers. Has that had any effect on the indirect cost rate itself, to your experience? Do universities ever lower their rate once you get a negotiated lower amount with regard to the grant itself?

Dr. BERNTHAL. Well, how the university chooses finally to handle that kind of negotiation, of course, we don't necessarily follow up. If there is a bottom line and the program officer says, "This is all the money I have," you decide essentially how to split it up, or perhaps works with the proposer to determine some appropriate split. That simply reflects the limited funds that we have, and whether the university ends up eating that or whether the Department ends up, or getting it from some other source, I don't know, and I don't think we could say in the general case.

Mr. BOUCHER. I guess we didn't have the proposal, per se, but the inspector general of HHS, in testifying before another committee, had made the suggestion, if not the recommendation, that perhaps that very kind of system be implemented Government-wide and that, instead of having the Federal Government address the indirect cost issue at all, that the Federal Government should simply

make research grants to universities, to principal investigators, and let the university and the PI, between them, decide what portion of it will be paid to the university in order to cover overhead.

Some others had suggested that that might cause an unbearable amount of tension between the university and the private investigator. Since you have something that is akin to that system in effect, what comment do you have? Is that kind of tension something we should be concerned about?

Dr. BERNTHAL. It is something we should be concerned about, and I must say that I don't suggest for a moment that we condone, encourage, and urge as a matter of policy that our program officers routinely try to negotiate down indirect cost rates. In fact, they certainly do not do that as a matter of routine, but when it comes down to a question of how much money is there left on the table, then clearly something has to give somewhere.

Nor do I endorse the suggestion then generally that was made earlier—I believe it came from the inspector general at HHS—that we simply leave it up to the individual investigator to carry out those negotiations. I completely agree with the comments of Dr. Schmitt earlier. I think there are enough difficulties and tensions already within universities between administration and faculty that we don't need to introduce additional problems into the system. I do not think that would be a good idea, and I might mention also that most of our grantees have better things to do with their time than to fight with their own administration over what their overhead rate should be.

Mr. BOUCHER. I am sure that is true.

Let me finally ask both witnesses if you have any broad recommendations that this subcommittee should consider for how to improve the system of indirect cost recovery—anything you would like to offer in parting.

Dr. BERNTHAL. Well, I would go back again, Mr. Chairman, to the recommendations of the Packard-Bromley panel. Those recommendations have been reflected in other commissions and panels that have studied this issue. It is clear to us, I believe, that a question of a fixed overhead rate—or perhaps a threshold rate has been suggested by some—at least for the administrative portion of the indirect cost burden would be appropriate.

Again, I reflect the comments of Dr. Schmitt. We did not consult, by the way. He is a member of our board, as you know. We didn't consult before we came here today, but I agree with him that something else there needs to be done with the question of facilities and equipment write-offs, depreciation, and so forth. That is a different issue and, I believe, would need to be handled in a different way, and perhaps a way that is subject to a somewhat similar negotiating process as we currently have.

With respect to the administrative overhead costs, I think some changes could be made there. So that is at least one suggestion that, again, we would urge.

I must say that A-21 and similar documents, to the uninitiated, don't appear to be models of plain English and I would think probably do contribute to the overall administrative, regulatory—if you wish—burden that is being borne by our universities.

I want to make one other comment here, Mr. Chairman, however, and that is the trend that we have all seen over some years now of trying to legislate or regulate good judgment or even ethical behavior somehow. As we all know, it is not possible to do that, and I think it would be a mistake if we assume, in the case of Stanford, for instance, that by somehow modifying A-21—which might be good and has been tried in the past—that by changing the overhead system, which, after all, is a viable method that we have chosen to aid universities in carrying out research that we find to be in the national interest, whatever we do with respect to accounting practices, or law, or regulation will not substitute in the end for good judgment.

In many cases, the kinds of expenses that we have heard about, that have been allocated improperly to Government overhead, I would think would have a bad appearance however the bookkeeping ends up being done, and it is a small additional step to ask the question, even if we did fix the bookkeeping--if they asked the question from your side of the table perhaps, if they have money to spend on things like that, then why are we giving them money for other purposes?

So my point is that it is a zero sum game in many respects. It is not a question of what is allocable and what is not allocable but more one of what is appropriate and not appropriate or, one might even say, what is seemly and what is unseemly, and that is something that we aren't going to fix simply by making some of the modifications that I think, in fact, could be helpful and good.

Mr. BOUCHER. Well, our present plan is on the right track, though. What is happening, in summary, is that OMB is now looking, supposedly in detail, at Circular A-21; Circular A-133 is now in effect that requires compliance auditing; and there obviously will now be some greater institutional accountability—or we hope there will—on the part of management of universities in the wake of all the publicity that has recently been forthcoming.

Beyond that, what else needs to be done? Does that take care of it, or are there additional steps that would be required?

Dr. BERNTHAL. Again, I would simply say very succinctly that some of the modifications in the system that have been suggested—and it is a system that, I stress again, has served our country very well over the years—that some of the modifications suggested by Packard-Bromley, the Pings report, for example, deserve a very careful look.

I, too, am not enthusiastic about the list of some of the suggestions that you went through earlier this morning, but I wouldn't want to confuse that with the need for all universities, all institutions, to pay attention to appearances as opposed to what the letter of our regulation might say.

Mr. BOUCHER. That is a very thoughtful response.

We are going to be looking at the recommendations of Dr. Ping and the Packard-Bromley report at our next hearing on Thursday, and so that might be a convenient place for me to terminate my questions of you and ask Dr. Mussman if he has any comments and suggestions.

Dr. MUSSMAN. Thank you, Mr. Chairman.

Just to add that we are quite pleased with the way our system has worked, not necessarily totally satisfied with the current cap that is on the Competitive Grants Program, but I am talking about the operation, the management, and so on. We do operate in a sense of trust with the universities with which we deal. There is the audit program that is being carried out by the negotiating—the cognizant agencies, to which reference has been made here. But, in addition, we have our own OIG that does periodic reviews of the various projects, audits indeed of the detailed spendings and allocations of funds to various activities within those projects. We believe that we have a system in place that is very effectively managing the public's money, that we do have the accountability that is being sought by everyone.

But I would share the view that Dr. Bernthal and others have expressed that the whole concept of ethics seems to be in need of refurbishing, of being reinstilled in the community that apparently has gone for a long length of time without being held to account on a number of activities that they have gotten involved in. But I think the way to go about that is not through—as I said earlier—not through a legislative process but to use the regulation route, through the OMB circular route, which can address from time to time any issue which may emerge in a much more convenient way than it may be to come down with a legislative package which has the effect of hitting the small tack with a sledge hammer.

Thank you very much, Mr. Chairman.

Mr. BOUCHER. We will try not to use any sledge hammers.

Thank you, Dr. Mussman.

The gentleman from California.

Mr. PACKARD. I will be very brief. The only question I had was in regard to the differences between private and public institutions versus maybe national labs and private industry not only in the setting of rates and the determinations of the indirect costs, but also in the monitoring. Have you noticed, or is there a difference in the way you monitor or audit and follow national labs versus State-funded institutions and universities versus private universities—versus private sector industry?

Dr. BERNTHAL. Mr. Packard, again, our monitoring certainly does not involve the national laboratories at all, and, in fact, we rely, as I indicated earlier, on HHS and the Office of Naval Research to set the rates for the majority of the grant money that we bestow on universities and institutions.

Our inspector general also, within the National Science Foundation, however, is responsible for the period audits of the grants that we put out the door, and, in particular, responding to your point raised about any differences between private and public, I do not believe that there is any conscious attempt, that I am aware of, to distinguish between private and public universities, certainly not in the National Science Foundation to the extent that we are responsible, and I will let the other agencies speak for themselves, but I am not aware of any such bias in the system.

Mr. PACKARD. Inasmuch as you have fixed rates and fixed figures, do you find where some institutions simply say, "We're not interested," and yield to other institutions in the competition for the grants and for that research opportunity?

Dr. BERNTHAL. You mean, are institutions turning down grants because of the indirect costs?

Mr. PACKARD. Right.

Dr. BERNTHAL. No, that certainly has not happened, to my knowledge.

Mr. PACKARD. Thank you.

Thank you, Mr. Chairman.

Mr. BOUCHER. The chair thanks the gentleman and expresses gratitude to this panel of witnesses for their insights this morning and this afternoon.

There will be a hearing on Thursday morning, beginning at 10 o'clock, to continue this inquiry, and, until that time, this subcommittee stands adjourned.

[Whereupon, at 1:12 p.m., the subcommittee was adjourned.]

INDIRECT COST OF UNIVERSITY RESEARCH

THURSDAY, APRIL 25, 1991

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
SUBCOMMITTEE ON SCIENCE,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:05 a.m., in Room 2325, Rayburn House Office Building, Hon. Rich Boucher, [chairman of the subcommittee] presiding.

Mr. BOUCHER. The subcommittee will come to order.

Today, the Science Subcommittee begins its second hearing on indirect costs of university research. On Tuesday, we asked agency witnesses to describe the system of indirect costs to identify problems and to make recommendations for change.

Today, we have asked witnesses from the private sector and the university community to suggest to us how the system should be reformed to ensure appropriate government regulation and rigorous university accountability.

Investigations that are still ongoing by the Energy and Commerce Committee have exposed a cavalier attitude at some universities toward the stewardship of public funds. The American people have placed great trust in our universities and we expect that trust to be rewarded by a scrupulous determination to see that public monies are used only for their intended purposes.

Have universities lived up to that expectation? A General Accounting Office investigation of Stanford identified more than $369,000 that was inappropriately charged to federally sponsored research.

On Tuesday of this week, MIT announced its intention to return $731,000 to the Federal Government for charges which it says were allowable, but inappropriate. If the regulations surrounding indirect cost reimbursements are vague, the purpose of those regulations certainly is not. Indirect cost reimbursements are intended to support the conduct of scientific research. When a university accepts Federal funds, its obligation to see that those funds are used for the intended purposes is not diminished because of vague regulations or faulty oversight.

How indirect costs are treated by the government and by universities themselves has profound implications for the conduct of teaching and research at our universities.

At our hearing today, we intend to explore a number of policy issues associated with indirect cost reimbursement. Some have suggested, for example, that we could eliminate overhead cost reimbursements altogether by awarding the full research grant to the

principal investigator, allowing the investigator to negotiate indirect costs with the institution. Will that proposal change the nature of the institution and further divide faculty from administration, one department from another? A serious question. We hope some light will be shed on that during our hearing today.

On Tuesday, the Defense Contract Audit Agency testified before this subcommittee that the real problem was not poor regulation or oversight, but poor university financial management. Is there any merit in that argument? Is university mismanagement responsible for inappropriate charges to indirect costs and lack of prudent investment in facilities?

How can we been effect financial management at universities receiving Federal research funds?

For some years now, this subcommittee has heard about the woeful state of academic research facilities. The allowance of building depreciation as an indirect cost is designed to provide funds to universities for building improvements, but are universities using depreciation revenues to refurbish research facilities? We understand that some universities are allocating a portion of indirect cost reimbursements to principal investigators as discretionary money. Is that really the purpose for which these funds were intended?

It has also been suggested that we abolish building and equipment depreciation as an indirect cost and, instead, focus Federal support on direct grants for research facilities. Witnesses on Tuesday did not support that recommendation, but if universities are not using depreciation allowances for the intended purposes, then what alternative do we have?

It has been suggested that we should cap all indirect costs at a single rate of around 50 percent and use any savings that may be derived from that mechanism to increase support for research grants. Would the university community support that recommendation or some modification of it?

Universities employ private accountants and auditors to review their financial systems, but apparently they do not routinely share the details of those audits with the Federal Government. Should Congress mandate that universities share full audit results? Should the government bear the full cost and accountability of university accounting?

Circular A-21 allows universities to charge a portion of dues to professional organizations to indirect costs, yet many of those organizations engage in activities, such as lobbying and entertaining, that themselves are not allowable. Why should Federal research funds be paying for those activities?

The American model of federally funded university-based research has produced the world's most productive and successful research infrastructure. It is this committee's determination to maintain and, in fact, enhance that strength. But serious questions have been raised about the indirect cost component of the system. Those questions cannot be ignored. It is our hope that in responding to the concerns that were just stated and offering recommendations for change, that today's witnesses will make a valuable contribution to the reform effort.

That concludes the Chair's opening statement and the Chair now recognizes the ranking Republican member of this subcommittee, the gentleman from California, Mr. Packard.

Mr. PACKARD OF CALIFORNIA. Thank you, Mr. Chairman.

All of our witnesses are very distinguished and have impressive backgrounds and we certainly want to welcome them to this second day of our subcommittee's hearings on indirect cost for university research.

I would especially like to welcome Dr. Carnelius Pings, Provost of the University of Southern California. Dr. Pings, I look forward to hearing your testimony about the experiences as chairman of the AAU, the Association of American Universities Ad Hoc Committee and the report that resulted from the committee's review.

Also, even though we share the same name, we haven't had a lot of personal relationships over the years, but I certainly recognize the distinguished career and credentials of Mr. Packard and all of our witnesses.

Today we will get the university's side of the story on what, if anything, should be done to the process of determining indirect cost reimbursements. Once again, we want to examine what indirect costs are appropriate, what level of Federal oversight is necessary to ensure that universities are properly using the Federal funds that they receive. We will want to get the panel's view—point of view on what kind of uniform accounting systems would be acceptable, and if caps on different components of indirect costs would be advisable.

Mr. Chairman, I applaud you for calling the hearing and look forward to the witnesses' testimony.

Mr. BOUCHER. The Chair thanks the gentleman.

We are going to pause in the proceedings momentarily while some of the custodians bring in additional chairs. We have a few extra in the hall and in order to seat those who are standing, we will take just a moment to have those brought in.

[Recess.]

Mr. BOEHLERT. I am impressed by the custodial staff.

[Laughter.]

Mr. BOUCHER. We got an indirect cost reimbursement for these people.

[Laughter.]

Mr. BOUCHER. The subcommittee is now pleased to welcome our first panel of distinguished witnesses this morning. Mr. David Packard, the Chairman of the Board of the Hewlett-Packard Company, and Co-Chairman of the 1986 White House Science Council Panel on the Health of U.S. Colleges and Universities. The report of that panel, known as the Packard-Bromley Report, which was published in February of 1986, made recommendations for changes to the indirect cost system which have been the basis for much discussion and subsequent additional recommendations.

Dr. Robert Johnson, Vice President for Research at Florida State University, is also appearing this morning. We have asked him to testify concerning the Florida Demonstration Project which was later nationalized into the Federal Demonstration Project with a view toward reducing some of the inherent costs in making applications for research funds and the paperwork that attends the report-

ing with regard to those funds. We will be interested in hearing from Dr. Johnson with respect to the results of those demonstration projects.

And in order to introduce our third distinguished panel member, it's my pleasure to yield to the Chairman of the full Science, Space and Technology Committee, the gentleman from California, Mr. Brown.

Mr. BROWN. Thank you very much, Mr. Chairman.

It is a distinct pleasure for me to have included in this distinguished panel this morning one of my oldest and closest friends from California, Dr. Cornelius J. Pings, who has been at the University of Southern California, and before that, at Cal Tech, for more than 30 years and I think that we have been friends and I have benefited from his advice and counsel over almost all of that 30 years. As he knows, this relationship stemmed from the fact that his mother was a very perceptive woman, one of my very earliest supporters, and—

[Laughter.]

Mr. BROWN. —it led to this long and fruitful relationship with Dr. Pings. I think the committee probably has his resume before them, but I think it's important to point out that in addition to a brilliant academic career as a researcher and teacher, he's been an outstanding administrator and has contributed to the analysis of many important public policy issues over a long period of time, including the issue before this committee today.

And refreshing my memory as to the cogency of his earlier report on this subject, I was impressed by the fact that if we followed some of the suggestions that he made and which, likewise, Mr. Packard has made, we probably could have avoided many of the current difficulties that are before us, so I'm very, very pleased to have him here this morning to continue his long record of advice and consultation to the Congress and, having said that, let me just add a word about the significance of the issue that we're dealing with here.

The matter is before us not because it threatens the financial stability of the country or anything of that sort. The fact is that inappropriate cost charges by Members of Congress—not even to mention the Executive Branch—probably exceed what we've heard with regard to inappropriate charges from universities over the years and it's not that that leads us to focus on it. It is the fact that we attach to the university research community a higher standard, a standard which expects them to be like Caesar's wife, to be pure in all things, and under the pressures that exist today on the funding of university research, there probably have been some slight deviations from that purity.

I think the universities will want to correct them and that we in this committee, under your chairmanship, Mr. Boucher, can provide the objective and rational evaluation of this matter and point us in the direction that needs to be followed, and that will strengthen both the respect in which the university community is held by the American people, and we have to be concerned with that, obviously; and it would—probably will also lead to some additional benefits in terms of more rational funding programs in which we are always interested, and I wanted to make those com-

ments and to express my own strong support for what you're doing in this subcommittee.

Mr. BOUCHER. The Chair thanks the gentleman for those remarks and for joining in welcoming Dr. Pings to this panel.

Without objection, the prepared statements of the witnesses will be made a part of the record and we'll be pleased at this time to receive your oral summaries.

Mr. Packard, we'd be pleased to begin with you, sir.

STATEMENTS OF DAVID PACKARD, CHAIRMAN OF THE BOARD, HEWLETT-PACKARD COMPANY; CORNELIUS J. PINGS, PROVOST AND SENIOR VICE PRESIDENT FOR ACADEMIC AFFAIRS, UNIVERSITY OF SOUTHERN CALIFORNIA; AND ROBERT M. JOHNSON, VICE PRESIDENT FOR RESEARCH, FLORIDA STATE UNIVERSITY

Mr. DAVID PACKARD. Thank you very much, Mr. Chairman, and members of the committee. I am very pleased to have this opportunity to appear before you today and I must say, Chairman Brown, I was much encouraged by your view that this is a very important overall issue, much more important than the specific question of the overhead problems that brought this to light.

I've been involved in this issue probably as long as anyone else. I began being involved in 1940, before the war, and worked very closely during the war, although on a very small scale, and was very close to Dr. Terman when he began his endeavor at Stanford, which has been extremely important over the years.

Now, as was already mentioned, I was a Co-Chairman of the White House Science Council Panel with Allan Bromley. We spent about two years looking at the issue of health of the United States' universities and we made some specific recommendations. I think you have a copy of those recommendations.

I want to make it clear, however, that my appearance before you today is strictly personal and I am not appearing on behalf of the administration. I also realize there's not going to be time to consider these recommendations in any great detail, but I want to emphasize again it is extremely important to look at this issue in the overall context and not just in isolated matters.

I think there's no issue that's before the Congress today that is more important to the future of our country than this issue that you're addressing, and so I hope that you and your associates, and I hope that we can help you deal with it in that way.

Now, I want to just take a few minutes to summarize the background of this to be sure that we have some idea of the overall context of it.

Before the beginning of World War II, there was actually very little research done in American universities, very little Federal support. There were a few exceptions here and there. One of the major exceptions was the support of the Land Grant Colleges that was established by the Morrill Act of 1862, which allocated pieces of Federal land to various universities to do basic applied research in agriculture. That system has grown up to provide extremely important research information, distributed through a group of advisors throughout the country, and I've had a little experience with

this, also, because I've not only spent a good deal of my spare time playing golf and other things, I've spent most of my last 40 years being a rancher and a farmer, too, and if it hadn't been for these farm advisors, we would never have been able to make our agricultural ventures successful.

And so there's no question about it, that it is because of this research that was originated by the Congress of the United States that American agriculture has become the most productive in the world today.

When it became evident that the United States was likely to become involved in World War II, President Roosevelt asked Vannevar Bush to head a new agency called The National Defense Research Committee, in June of 1940, he was asked to recruit and use the best scientific talent to help win the war. He recognized, I think, that the Allies were not likely to win without American help of some kind and this was the first step in attempting to do that.

Dr. Bush began his endeavor by recruiting 6000 of the country's leading scientists, engineers and doctors. This was later changed in name to the Office of Scientific Research and Development. By the end of the war, there were 30,000 of the best, brightest scientists, engineers and doctors in the country engaged in this endeavor to use science to win the war.

Now, in my report, I summarize some of the things that they did, but I want to particularly emphasize that this endeavor was described in a book written by Vannevar Bush in 1949. The book was entitled, "Modern Arms and Free Men," and I would recommend that every member of this committee read that book if they have not done so.

Now, because of the success of this scientific effort in winning the war, Dr. Bush was convinced that it should continue after the war and he stated it in this way: "On the wisdom with which we bring science to bear in the war against disease and the creation of new industries and in the strengthening of our armed forces depends, in large measure, our future as a nation."

I think if you look at what has happened since that time, Vannevar Bush's advice was followed and the outcome was exactly as he predicted. The United States today is the leader in the world of technology. Our science has made great progress in the war against disease. Our science has created vast new industries and our brilliant military victory, Desert Storm, was assured for our distinguished military leaders and our highly skilled, brave, dedicated men and women in uniform—because our science created for them the best weapons in the world.

Now, I think it's essential that this issue be addressed in terms of its tremendous overall importance.

Now, I'm going to make some very specific recommendations. These are, I think, to be considered as a framework. To expand them is going to take a good deal of discussion, but I think this framework would be the logical way to deal with this program.

The first recommendation is that the administrative overhead should be paid for by the Federal Government as a fixed percentage of direct research costs. Now, I'm not prepared to recommend at this time exact figure. I think there's enough work that's been done on this issue to be able to determine what that figure should

be. It's probably less than 50 percent for private universities; probably 10 to 15 points less for State-supported universities and probably something different for medical schools.

This fixed allowance for administration need not—in fact, should not be subject to audit by the government or accounted for in detail by the university. Elimination of these auditing requirements will reduce the cost, both to the government and the university, and put to rest this current anguish about the legality and the propriety of administrative overhead costs.

Cost of buildings and major equipment. Those costs are paid for by university funds and should be reimbursed in government contracts by a payment of the government's fair share of interest at about the average level of the current return on university endowments and by an allowance for depreciation. Depreciation would be on the life of buildings for 20 years and for instrumentation and equipment in the five- to 10-year range.

Now, there are some possible variations in the interest rate that—I have suggested one which I think would be logical. There are others that might be considered appropriate.

Now, the accounting principles for doing this are well-established and specific recommendations could very easily be prepared by the GAO, the OMB and a nationally recognized accounting firm. Both the Congress, the Administration and the university would each be represented in the determination of how these costs for buildings and equipment by the university should be reimbursed on Federal contracts.

Now, the management of direct costs is probably the most important issue of all. Those are the costs for the salaries and the fringe benefits of the scientists and the engineers and the doctors who are doing the research, the cost of their assistants, including graduate students and materials and so forth for their work.

Here, again, I think there's general agreement on what these direct costs should cover. These direct costs should be precisely determined and be uniform for all contracts. Now, the problem in this area is that far too many reports, far too much paperwork is being required of the people who are doing this research. Just a couple of examples. Some government contracts require research people to make three reports every month, financial reports, scientific reports and report of their work for people who do not understand science.

Some government—in fact, probably all government contracts require a plan to increase the use of minority subcontractors, even though this research requires no subcontractors at all. Now, there's a large variation in the amount of reporting required among government agencies. This reporting should be reduced to a bare minimum and uniformity among all government agencies should be required.

Now, the competition for government funding has become so severe that only about one in three proposals submitted for approval is approved. Thus, a research person must submit three proposals every year just to have a fair chance that one of these proposals will be accepted.

Now, this excessive reporting and paperwork usually requires, in my opinion—and I think this can be verified—from about a quarter

to a third of the top research person's time and it makes no contribution whatever to the quality of the research being done.

Now, there are a number of other recommendations in the Packard-Bromley Report of 1986 and the other reports that have been made since. For example, most projects should be funded for at least three years. There is no way to accurately measure the division of a research's time between people and research and there is absolutely no reason to do so. There is a problem in catch-up costs for universities. Some of the facilities are behind the state of the art where they should be. That's another issue that I'm not focusing on today.

Now, it's very important that these three key recommendations, with whatever modifications may be appropriate, be implemented as an integrated unit and they should not be implemented individually. To do so would probably cause more damage than benefit.

In my opinion, all Federal agencies that are provided funding for university research must be required to adopt them. I think that is the responsibility of the Congress to impose on them and if this is done, there will be significant cost savings; there will a lower—there will be more research from a lower level of funding.

Now, these things can be done without requiring any additional funding from the Congress. Now, there are issues beyond this that might require some additional funding, but I think it's important to recognize that there's an opportunity here to make some real improvement.

Now, it's the oversight responsibility of the Congress to determine whether the taxpayer is receiving full value for the Federal dollars spent on research at United States universities. In my opinion, the answer is a resounding no, and I think it's primarily the fault of the way the Congress has imposed all these unnecessary regulations.

Ladies and gentlemen, that completes my presentation. I will be glad to discuss these recommendations in whatever detail you like in the following period.

[The prepared statement of Mr. David Packard follows:]

HEARING ON THE INDIRECT COST OF UNIVERSITY RESEARCH

BEFORE THE

SUBCOMMITTEE ON SCIENCE

OF THE

HOUSE OF REPRESENATIVES COMMITTEE

ON

SCIENCE, SPACE, AND TECHNOLOGY

BY

DAVID PACKARD

CHAIRMAN OF THE BOARD

OF

THE HEWLETT-PACKARD COMPANY

WASHINGTON, D.C. APRIL 25, 1991

Mr. Chairman and Members of the Subcommittee,

I am pleased to appear before you today at this hearing on the Indirect Costs of University Research. I have some recommendations to make which, if adopted will, I am quite sure, enable the research people at universities to do substantially more research with the funds provided by the Congress than they are able to do today. My recommendations will include the Administrative Cost issue, Direct Cost matters, Buildings and Equipment, and some of the other issues covered in the White House Science Council Panel on the Health of the U. S. Colleges and Universities, which I co-chaired with Dr. Allan Bromley from May 1984 until February 1986. My appearance before your committee today is strictly personal and my comments do not represent the position of the Administration. I realize there will not be time at this hearing to consider all of these recommendations in any detail, but I think it is very important for this committee to address the overall problem, not just the indirect cost problem.

In my opinion there is no issue before the Congress that is more important than determining how America can maintain its position of world wide leadership in technology that has been achieved since World War II. The matters to be discussed at this hearing are an important part of this issue, but I want to begin with a brief summary of how the federal support of university research began and why it is so important.

Before the beginning of World War II federal support of research at American universities was minimal. The one major exception was the support of grants of federal land to state colleges to teach subjects "related to agriculture and the mechanical arts", under the Morrill Act of 1862. These Land Grant Colleges are still doing basic and applied research in agriculture and making the results of this research available to farmers and ranchers through an organization of farm advisors that cover the entire country. Because of this research enterprise, originated by the Congress of the United States, American agriculture is the most productive agriculture in the world today.

When it became evident that the United States might become involved in World War II President Roosevelt asked Dr. Vannevar Bush to head a new agency called the National Defence Research Committee in June 1940 to recruit and use our best scientific talent to win the war. Dr. Bush began the effort by recruiting six thousand of the country's leading scientists, engineers and doctors. This later became The Office of Scientific Research and Development. By the end of the war there were thirty thousand of the best and brightest scientists, engineers and doctors in the country engaged in this endeavor to use science to win the war.

Some of these scientists concentrated on the specific objective of making the atom bomb. Others concentrated on applying scientific research and product development to all other aspects of the war effort. They developed better radar and radar counter measures, the proximity fuse, better sonar equipment for our submarines, countermeasure equipment for submarine warfare, which confused the enemy about the location of our submarines, and a great many types of equipment and systems described as electronic warfare.

This great research and development project was the most important determinate in the allied victory over the enemy in Europe and in our success in retaking the islands in the western Pacific from Japan. The skill of our military leaders and the bravery and dedication of our men and women in uniform was magnificent, and this research effort gave them the best weapons to assure victory. The atom bomb was a factor in the ultimate victory in the surrender of Japan, and saved millions of lives.

This unprecedented endeavor is described in detail in a book, Modern Arms and Free Men, written by Vannevar Bush in 1949, and every member of this committee should read this book if they have not done so.

Because of the success of this war time project Vannevar Bush was convinced that a similar effort should continue after the war. He stated it this way: "On the wisdom with which we bring science to bear in the war against disease, in the creation of new industries, and in the strengthening of our armed forces depends in large measure on our future as a nation."

Vannevar Bush's advice was followed and the outcome has been exactly what he predicted. The United Sates is today the leader of the world in Technology. We have made great progress in the war against disease. We have created vast new industries, and our brilliant military victory, Desert Storm, was assured because our distinguished military leaders and our highly skilled, brave and dedicated men and women in uniform had the best weapons in the world.

It is essential that every member of this committee, and indeed every member of the Congress and of the Administration recognize that the subject we were asked to discuss with you today, Administrative Overhead, is only a small part of the major issue which is: How can this research and development endeavor, which has served our country so well since World War II, be continued with equal success in the years ahead.

Again I want to tell you, in my opinion, there is no matter of greater importance for the future welfare of our country before the Congress today.

RECOMMENDATIONS: I will now give you some of my specific recommendations on various aspects of this issue. Because of the limited time available I will not be able to go into much detail, but more detail can be considered in the question and discussion period.

ADMINISTRATIVE OVERHEAD:--Administrative costs should be paid for by the federal government as a fixed percentage of direct research cost. I am not prepared to recommend an exact figure, but I think it should be about 50% for private universities and ten to fifteen points less for state supported universities. The figure for medical schools should probably be different. This fixed percentage allowance for administration need not be audited by the government or accounted for in detail by the university. The elimination of the auditing requirement will reduce the cost to both the government and the university, and put to rest the current anguish about the legality and propriety of Administrative Overhead costs. This Administrative Overhead allowance would include occupancy costs, light, heat, janitorial services and routine maintenance, but not a share of the original cost of buildings and major equipment.

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THE COST OF BUILDINGS AND MAJOR EQUIPMENT:--The cost of buildings and major equipment paid for by university funds should be reimbursed in government contracts by a payment, of the government's fair share of interest at the average level of the current return on university endowments and by an allowance for depreciation. The allowance for depreciation should be on a life for buildings of 20 years and for instrumentation and equipment in the 5-10 year range. The accounting principles for doing this are well established and specific recommendations should be prepared by the GAO, the OMB and a nationally recognized accounting firm so that the Congress, the Administration and the Universities will each be represented in the determination.

THE MANAGEMENT OF DIRECT COSTS:--The direct research costs are the salaries and the fringe benefits of the scientists, engineers and doctors who are doing the research, and the costs of assistants including graduate students and the materials, etc. needed in their work. I think there is general agreement on the cost elements that are considered direct costs. The direct costs should be precisely

defined and be uniform for all contracts. The problem in this area is that far too many reports, far too much paper work is required of the people who are doing the research. Some of the government contracts require the research people to make three reports every month, a financial report, a scientific report, and a report of their work for people who do not understand science. Some government contracts require a plan to use minority subcontractors even though the research requires no subcontractors at all! There is a large variation in the amount of reporting required among government agencies. The reporting should be reduced to a bare minimum, and uniformity among all governmental agencies should be required.

The competition for government funding has become so severe that only one in three proposals submitted is approved. Thus, a research person must submit three proposals every year to have a fair chance that one will be accepted.

This excessive reporting and paper work usually requires from a quarter to a third of the top research person's time and makes no contribution whatever to the quality of the research.

There are a number of other recommendations in the Packard-Bromley report of 1986 that need to be addressed. For example:--most projects should be funded for a least three years,--there is no way to accurately measure the division of the research person's time between teaching and research and there is absolutely no reason to try to do so.

These three key recommendations I have made on Administrative Overhead, Direct Costs and Buildings and Equipment must be implemented as an integrated unit. All federal agencies that provide funding for university research must be required to adopt them. If this is done there will be significant cost savings, and there will be more research from a lower level of funding.

It is the oversight responsibility of the Congress to determine whether the tax payer is receiving full value for the federal dollars spent on research at U. S. universities. The answer is a resounding NO! And it is primarily the fault of the Congress!

That completes a brief summary of my views on the subject. I will be pleased to respond to your questions and participate in the discussion.

Mr. BOUCHER. Thank you very much, Mr. Packard, for that expression of views and summary of recommendations from the Packard-Bromley Report. We will withhold questions until we've heard from our other two witnesses this morning, and Dr. Pings, we'd be pleased now to hear from you.

Dr. PINGS. Thank you, Mr. Chairman, and thank you, Congressman Brown, for those generous remarks.

Mr. Chairman, I would like to correct one typographical error in my written testimony. In the third line from the end, the word "optional" appears. It should be changed to "optimal," and since that is a sentence that deals with the stewardship of public resources in the context of these hearings, I wanted to assure you that I was talking about optimal, not optional.

Mr. BOUCHER. The record will be so corrected.

Dr. PINGS. My primary objective this morning is to put before the subcommittee the 1988 report of the Association of American Universities on the subject of indirect costs. Copies have been provided to you.

Much on the content of that report is, I believe, still directly pertinent to the issues before the committee in these hearings.

As Mr. Packard sketched, the university system in the United States became the focus of our national endeavor in basic research in science, engineering and medicine in the decades since World War II. We evolved into a system of higher education and basic research that seemed to benefit everybody involved. The existing universities became stronger and better. New institution emerged and many, both the new and the old, built science departments that they could not otherwise have afforded.

In the meantime, of course, the Federal Government got the basic science work of the nation done at a bargain cost.

But our comfort with that system may prove to have been illusory, as we have seen some very real stresses develop over the last decade, and the seeming mystique surrounding the indirect cost issue has been a contributor to the tension and loss of image.

Therefore, these hearings are a particularly welcome opportunity to explore and explain these matters and offer some suggestions for fundamental change and improvement.

In 1987, the Presidents of the institutions that comprise the Association of American Universities determined that it was timely to take a basic look at the phenomenon of indirect cost reimbursements to the major research universities by the Federal Government. The AAU Ad Hoc Committee was asked to go to work and think about the issue fundamentally, rather than in response to the specific actions by OMB or one of the program agencies. I was fortunate to be one of 10 individuals who served on that group.

We were asked to avoid getting entangled in any near-term issue if we could and rather focus our attention on the basics of the issue. Now, I realize the ramifications and rationale for our conclusions and recommendations may not be fully apparent, more the reason we welcome the opportunity for reaction and discussion here today.

But I do hope that the full report does make it clear that we found a system that was basically sound. Yes, there are some opportunities for simplification and improvement, but there are no

fatal defects. Upon inquiry and reflection, most of the seeming riddles had plausible answers.

To be specific on one issue, there are reasonable explanations for the wide range in rates which are in place. First of all, there are real differences in costs incurred at various universities, mostly in the operating costs of the specific research facilities.

But probably the range of intrinsic cost is not that large. What is wide-ranging are the rates actually charged or allowed to the individual institutions. We are persuaded that no university is recovering anything close to the total indirect expenses actually incurred. Some, however, are significantly under-recovering and for reasons that vary. Congressman Thornton referred to some of that, one such example of that, on Tuesday.

Also, of course, the rates are unilaterally set, but emerge from a negotiation process between each university and the cognizant program agency. That process reflects bargains struck with different agencies and their field officers at different times. It is usually hard to work backward from a rate that is finally approved and discern what is in and what has been disallowed.

The AAU report has a dozen recommendations, but I believe the most important are summarized as follows: First, we suggest that the indirect cost rate be split into two rates that are additive. A facilities and equipment rate would be documented and charged, as it is now. A second rate would include elements such as administration that are harder to define and, therefore, more controversial.

Second, we suggest that you establish a threshold rate for this second set of items which could be claimed without further documentation or be supplanted by a higher rate if documentation were supplied, and we invite direct comparison to the option we all have as individuals each year when we file our 1040 of either taking the standard deduction or filling out Schedule A.

That rate would be set at or near the current average with the provision to prevent windfalls for those below the threshold.

Three, encourage institutions to charge more of their research costs directly and to seek great uniformity across institutions in what is included in those end—excuse me, in those direct costs.

Four, we think it's important to adopt realistic rates of—for technological obsolescence facilities and equipment.

The above changes could be brought about my limited specific changes in OMB Circular A-21. The other recommendations of our committee can be or have been already simply implemented by the universities or the Federal agencies. I do not believe that there is a need for new legislation in this arena.

Let me move this towards conclusion with several general observations. The basic science program in this country is essential our well-being as a nation and as individuals. We have crafted a system of combined basic research and higher education that has been a great success, has put us in a leadership position, and is much envied. It is a system that is fair and open and has embraced newcomers, both institution and individual. questioning only merit and performance.

It is also a system that is cost-effective. But it is not free and the investment by the society must be adequate, sustained and stable.

In turn, all of us that have stewardship of these resources do acknowledge our accountability for their proper and optimal use. For that essential component called indirect cost, we probably can do a somewhat better job. Those of us associated with the AAU project hope that our efforts and recommendations could prove useful.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Pings follows:]

U.S. House of Representatives
Subcommittee on Science
Hearings on Indirect Costs of University Research

Testimony of
Dr. Cornelius J. Pings
Provost and Senior Vice President for Academic Affairs
University of Southern California

April 25, 1991

Thank you for this opportunity to appear before the Subcommittee on Science. I am Cornelius J. Pings, Provost and Senior Vice President for Academic Affairs at the University of Southern California, a position I have held for 10 years following a 26 year career as an active research scientist and engineer on the faculties of Stanford and Caltech.

My primary objective this morning is to put before the Subcommittee the 1988 Report of the Association of American Universities on the subject of indirect costs. Copies have been provided for you.

There was a time in the United States when colleges and universities were regarded as uniquely precious assets. Professors commanded considerable respect and university scientists in particular were viewed with awe and appreciation. But we seem to be moving towards a circumstance where these institutions and individuals are, at best, regarded now with indifference and, at worst, are looked upon with disdain and contempt.

The reasons for this erosion of support are several and may include halting leadership in the university and scientific communities. Confusion and misinformation on the indirect cost issue has certainly contributed. In any event, surely the nation is the loser.

Higher education has deep roots in this country. Harvard was already in existence for 140 years when the Declaration of Independence was signed. The Morrill Act of 1862 encouraged the land grant universities, which not only fostered education west of the Appalachians, but also contributed to the spread of agricultural research stations

throughout the country. In the estimation of some, that led to the most successful applied research program in the history of man.

The university system in the United States became the focus of our national endeavor in basic research in science, engineering and medicine in the decades since World War II. We evolved into a system of higher education and basic research that seemed to benefit everybody involved. The existing university became stronger and better. New institutions emerged, and many -- both the new and old -- built science departments that they could not have otherwise afforded. With that base, programs in the arts, humanities, social sciences and the professions also flourished. Individuals were able to prepare for and elect careers for a lifetime as faculty members and scientists.

In the meantime, the Federal government got the basic science work of the nation done at a bargain cost. In parallel, business, industry and the government were assured of an educated work force and the flow of new technology, which contributed to a booming economy and growing standard of living.

So this system of higher education and basic research that evolved over the last half century, though not perfect, seemed largely successful and reasonably comfortable to all parties concerned. But that comfort may prove to have been illusory as we have seen some very real stresses develop over the last decade. We are under increasing scrutiny and sometimes attack.

In reaction, we appear often to explain and defend ourselves weakly and ineptly. The seeming mystique surrounding the indirect cost issue has been a contributor to the tension and loss of image. Therefore, these hearings are a particularly welcome opportunity to explore and explain these matters and offer some suggestions for fundamental change and improvement.

The subject of indirect costs may seem intrinsically and dreadfully dull. But the stakes are very high. We are talking about billions of dollars a year -- more than $1.5

billion from NIH alone -- coming to our campuses with the label of indirect costs. As we have built that capacity on our campuses to meet the nation's needs in the area of basic research -- and we still do the dominant amount of it -- we have become very dependent upon the stability and continuation of those funds to support the infrastructure, administrative costs and broad based operating expenses.

But there is continual strife and anxiety. University administrations realize that in the best of circumstances we are not recovering the full costs associated with the federally supported programs of research on our campuses. We therefore yearn for acknowledgement of those true costs and, if possible, their payment. We protest efforts to contain, cap, or roll back those charges, and we particularly react at an occasional assertion that we are over-recovering or misusing such funds.

Some within the Federal Government, both executive and legislative branches, periodically hope there is some magic by which even more basic research can get done with limited resources by spreading a fixed amount of money over more investigators and over more universities, somehow expecting universities to step in and pick up the decrements, including major fractions of the indirect costs.

In the meantime the individual principal investigators tend to see things from the perspective of their own careers and their own research programs. They intellectually and objectively understand the finances of the university and the reasonableness of assemblying diffused and broad based expenses into average cost pools. Nevertheless, they find that the average indirect cost rates and its components do not seem to relate to their peculiar local circumstances.

In 1987, the Presidents of the institutions that comprise the Association of American Universities determined that it was timely to take a basic look at the phenomenon of indirect cost reimbursements to the major research universities by the Federal government.

The AAU Ad Hoc Committee was asked to go to work and think about the issue fundamentally rather than in response to specific actions by OMB or one of the program agencies. I was one of nine individuals who served on that group.

We were asked to avoid getting entangled in any near term issues if we could, and rather focus our attention on the basics of the issue. We particularly were asked to see if we could shed light on the wide range in rates and possibly give some suggestions for narrowing that spread. We were asked for suggestions that might have the potential for reducing tension between the university community and the Federal Government on one hand, and between university administrations and the community of principal investigators on the other. We were asked, also, if we could provide information and perhaps make recommendations that would make this whole system easier to understand, more explainable, more credible and easier to defend. We were not directed to make proposals for change, which in themselves would necessarily generate more money for universities, nor save money for the Federal Government or distribute resources in a different way. The Committee was particularly attentive to the development of recommendations which might improve the processes and attitudes and which would be fair and be perceived as fair.

We had an excellent Committee; members are listed on the transmittal letter and on page 4 of the full report, which has been made available to you. I want to assure you that our report was not a result of any indepth scholarly inquiry. We had to rely on what we thought we knew and could learn from each other and what we could garner from a rather extensive set of interviews with government and university officials in Washington and several trips into the field. In addition, we were mightily benefited by a study by the Council on Governmental Relations, which involved a detailed comparative study of indrect cost rates in a selected group of 14 universities. We were very fortunate, also, to have available during this interval reports from Cornell and Stanford, both of which are alluded to and cited frequently in our report.

I realize that the ramifications and rationale for our conclusions and recommendations may not be fully apparent -- more the reason we welcome the opportunity for reaction and discussion here today.

But I do hope that the full report does make it clear that we found a system that was basically sound. Yes, there are opportunities for simplification and improvement, but no fatal defects. Upon inquiry and reflection, most of the seeming riddles had plausible answers.

To be specific on one issue, there are reasonable explanations for the wide-range in rates which are in place. To some extent there are real differences in costs incurrred at the various universities, mostly in the operating costs of the research facilities. But probably the range of intrinsic costs is not that large. What is wide ranging are the rates actually charged or allowed by individual institutions. No university is recovering anything close to the total indirect expenses actually incurred. Some, however, are significantly under-recovering and for reasons that vary.

Also, of course, the rates are not unilaterally set but emerge from a negotiation between each university and the cognizant program agency. That process yields rates that sometimes seem arbitrary and seldom reflect explicit disallowances but rather results of bargains struck with different agencies and their field offices at different times. Indeed, it is usually hard to work backward from a rate as finally approved and discern what is "in" and what has been "disallowed."

The AAU report has a dozen recommendations, but I believe the most important are summarized as follows:

- Split the indirect cost rate into two rates that are additive. A facilities and equipment rate would be documented and charged as it is now. A second rate would include elements, such as administration, that are harder to define and therefore more controversial.

- Establish a threshold rate for this second set of items which could be claimed without further documentation (like taking the standard deduction on one's income taxes), or be supplanted by a higher rate if documentation were supplied. For most universities, this proposal would simplify the system and remove controversy over elements for which exact calculation is exceedingly difficult. This rate would be set at or near the current average, with a provision to prevent windfalls for those below the threshold.

- Encourage institutions to charge more of their research costs directly, and to seek greater uniformity across institutions in what is included as direct costs. Different practices on charging certain costs lead to variations in rates that are unrelated to variations in actual costs.

- Adopt realistic rates of technological obsolescence for facilities and equipment. Current rules allow amortization of buildings over 50 years and equipment over 20 years. Changing these periods to 20 and 15 years, respectively, would be much more realistic.

May I summarize some of the considerations and observations that led us to those basic recommendations?

Our Committee was asked to take up this subject at a time -- 1987-88 -- of relative quiet, with respect to national action or interest on indirect cost rates. Nevertheless, we were struck even then that a number of conditions that affect those rates were changing, and some perhaps rapidly. The report dwells on this matter, but nevertheless I want to make several observations. First, we worry along with all of you that the basic relationship between the university research community and the Federal Government has changed or at least is seen differently. Our younger faculty, unless they are scholars of the history of science, probably do not know who Vannevar Bush was or the public policy he advocated. The same is true of many government officials. Indeed to the extent that this system is perceived less as a partnership and more as a program of entitlements or simply procurement of research results by the Federal Government, the more likely we will face tougher attitudes with respect to cost, pricing, allocation of expenses and expectations for competition and for uniformity in charges.

That leads me to a few things that we learned about the vulnerability of the indirect cost system as we have known it. We heard frank appraisal and advice from a number of key individuals in OMB and the program agencies. All these individuals that visited with

us were cordial, generally understanding and supportive of the Committee's objectives, and seemingly generally interested in offering suggestions that might lead to a better system.

We agreed not to quote individuals directly, but I give you some reasonable paraphrases of several observations from individuals in key positions in OMB and HHS:

"Whatever the agreements or understandings, when we are short of money it is always easier to attack overhead than it is allocations for direct support of research."

And "If you were a Congressman, wouldn't you rather see a proposal for more research on cancer rather than for indirect costs?"

And "If I could give you some advice I would suggest that you put more emphasis on space related costs and call less attention to soft costs, particularly anything to do with administration."

I could go on with selected excerpts, but we were hearing a fairly consistent and firm message. To give you a summary of comments and advice in this one arena, we were told repeatedly that administrative components, and to a lesser extent the library component of the indirect cost rate, are seen as "soft." There was not much quibbling over the total costs incurred or their reasonableness. But there was long-standing and ongoing concern over the algorithms used to allocate those charges between the research function and the educational function.

On the other hand, we were told that charges for operation and maintenance of facilities and equipment are hard to argue with. These are costs for which things can be counted or measured, and allocation between research and teaching is usually straightforward.

Two different government officials told us, and again I synthesize a quotation, "If you want advice, keep a low profile on those administrative costs and charge reasonably for facilities."

These, then, were some factors that influenced our specific recommendations for splitting the rate into administrative and space related components and for some level of standard outcome for the administrative part.

Let me move this toward conclusion with several general observations. The basic science program in this nation is essential to our well being as a nation and as individuals. We have crafted a system of combined basic research and higher education that has been a great success, has put us in a leadership position, and is much envied. It is fair and open and has embraced newcomers, both institutional and individual, questioning only merit and performance. It is also a system which is cost effective.

But it is not free, and the investment by the society must be adequate, sustained, and stable. In turn, all of us that have stewardship for these resources do acknowledge our accountability for their proper and optional use. For that essential component called indirect costs, we probably can do a somewhat better job, and those of us associated with the AAU project hope our efforts and recommendations could prove useful.

Mr. BOUCHER. Thank you, Dr. Pings.

Dr. Johnson, we'll be pleased to receive your comments with particular focus on the Florida and Federal Demonstration Projects and any recommendations that you have for us for how the system of indirect cost recovery can be reformed.

Dr. JOHNSON. Thank you, Mr. Chairman, members of the Subcommittee on Science, I'm pleased to be here today to discuss an innovation for the improvement of the University Federal Research Administration. It has been officially known as the Florida Demonstration Project and then its successor, the Federal Demonstration Project.

In 1985, the University Industry Research Round Table and the National Academy of Sciences held a meeting in Washington to discuss issues and seek solutions to what was termed at that time bureaucratic accretion and its associated effect on research administration and the escalating indirect costs. It became clear from that meeting that we needed better understanding and communication among and between university and governments, both State and Federal.

We also need to find a way for better management at all levels and to reduce or even remove the principal investigator from the administration of his individual awards so that he or she can concentrate on doing research.

As a result, an effort was started in Florida by 10 universities, nine from the State university system of Florida and the University of Miami, along with five Federal agencies, The National Science Foundation, the National Institutes of Health, the Department of Energy, the Office of Naval Research and the Department of Agriculture, to make changes in research grant administration that would ease the administrative burden of the principal investigators.

This initiative became known as the Florida Demonstration Project, the FDP. Through the FDP, it was proven that by reducing the principal investigators' administrative efforts, research productivity was increased and greater return of the research dollar to do science was accomplished. All this was done without the loss of accountability, and I might add that the universities also improved their research management techniques.

The FDP participants, all five Federal agencies and the 10 universities, entered into an agreement and accepted a standard set of general terms and conditions for the post-award administration of research grants. It was not intended that the general terms and conditions would supplant OMB Circular A-21. However, they did modify certain sections of A-21 for purposes of the demonstration.

Near the end of the Florida Demonstration Project, a Federal interagency review team or auditors composed of nine representatives from the National Science Foundation, Department of Healthy and Human Services, National Institutes of Health, the Office of Naval Research and the Department of Agriculture concluded that the business and financial management systems in place adequate protected the interests of the government and that all systems were in compliance with agreements, terms and conditions and other requirements of the FDP. The review team's report, which I have put in as Attachment 1 of my longer state-

ment, was quite complimentary of the university and its overall conduct of the FDP program.

On May 18, 1988, the Office of Management and Budget, as a result of the success of the Florida Demonstration Project, issued an authorization of expanded authorities to all agencies that waive provisions of OMB Circular A-21 and A-110 relating to prior approvals and certain expenditures.

The extended authorities permitted all agencies to use the four changes that had been successfully tested in Florida.

On October—in October, 1988, the project was extended and now includes over 80 campuses and 11 Federal agencies and was renamed the Federal Demonstration Project. The Federal Demonstration Project is strong and actively engaged in several demonstrations. I think those are most in detail listing in my Appendix 2 of the full statement.

All participants—all participation in both FDPs, the Federal and the Florida, has been and continues to be on a strictly voluntary basis. No award, grant or contract has been made to provide financial support. Expenses, which are substantial, are borne by the universities that the Federal agencies, themselves.

There is a very active participation by university and Federal personnel with a very free and open discussion. All demonstrations are carefully controlled, monitored and have effective follow-up evaluation to test success or failure.

Over the years, there have been many studies, reports and recommendations suggesting corrective action for better management of research administration and the increased costs of research, but all seem to find the same dusty shelf. But here is a group of university and agency personnel clearly demonstrating that effective management can be made without loss of accountability, saving time, effort and research administration and even possibly reducing costs.

In my longer statement, prepared statement, I suggested some changes, made some recommendations, not necessarily legislative in nature, but possibly administrative and let me briefly summarize them.

Number one. OMB guidelines should specifically provide the use of the expanded authorities which they approved in 1988 in research grants. This can be accomplished by amending the existing circulars or by issuance of separate guidance relating to research grants.

Two, in the last three or four years, there have been approximately 25 additional administrative requirements imposed upon research administration. This is a six-fold increase over our accomplishments in the Florida Demonstration Project where four administrative requirements were redefined as part of the shared management accountability concept of that project. Is it little wonder the indirect cost rates are increasing?

A mechanism must be found that will reduce the burden and the bureaucracy in both the universities and the Federal agencies to manage—in the management of these needed administrative requirements. This can be done. I believe we are about ready to do so within the Federal Demonstration Project or a streamlined demonstration of these requirements.

Three, the FDP, the Federal Demonstration Project, has the ability to test new and innovative ideas and can add to its membership to include all interested parties, such as the congressional staff and the auditing units of both the Department of Health and Human Services and Defense Contract Audit Agency. Although the FDP has been reluctant to study the indirect cost issue, I believe that it is time they seriously consider such a study.

Four, the Federal Demonstration Project has a real role in improving the relationship; that is, the communication and understanding between the universities and the Federal Government. Clearly, it has established that it can effect change, a change that is beneficial to both the university and the Federal Government, without loss of accountability.

The FDP can continue to serve as a forum for Federal and university partners to discuss development of research administration policies and, more importantly, to test and demonstrate its suggested solutions. However, the FDP needs to be formally recognized, not necessarily through legislation, but by administrative directive, possibly through the Office of Budget and Management, STP or something of that nature.

Finally, five, which I don't know if this Congress can help, but I think they could get behind us and maybe help push on the States a little bit. The States need to take a leadership role towards reducing its administrative requirements and becoming involved in the shared management accountability concept with the universities, similar to that seen with the FDP.

Mr. Chairman, that concludes my reading.

[The prepared statement of Dr. Johnson follows:]

STATEMENT BEFORE THE

SUBCOMMITTEE ON SCIENCE

COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

UNITED STATES HOUSE OF REPRESENTATIVES

HEARING ON THE INDIRECT COSTS OF UNIVERSITY RESEARCH

ON

APRIL 25, 1991

BY

ROBERT M. JOHNSON

VICE PRESIDENT FOR RESEARCH

FLORIDA STATE UNIVERSITY

STATEMENT BEFORE THE

SUBCOMMITTEE ON SCIENCE

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UNITED STATES HOUSE OF REPRESENTATIVES

HEARING ON THE INDIRECT COSTS OF UNIVERSITY RESEARCH

Mr. Chairman, my name is Robert M. Johnson and I am Vice President for Research at the Florida State University in Tallahassee, Florida. I appear before you today to discuss an innovation for the improvement of University/Federal research administration, officially known as the Florida Demonstration Project (FDP) (1986-88) and its successor the Federal Demonstration Project (FDP) (1988-Present).

Although the Project was not initiated for the study of research costs as such, the FDP may prove to have a real and lasting role in dealing with the complex issues of university research costs (direct and indirect), the University/Federal relationship and the establishment of "trust" between the research partners.

Recent concerns involving a particular University's indirect costs have resulted in a tendency to put all universities in the same dim light. This is unfortunate because university research and its administration is not conducted in the same manner at all universities. Each university sets its own policies and procedures to meet their individual needs and requirements. Of course, this must be done within the guidelines set forth in OMB Circular A-21 and other rules and regulations.

For reasons not clearly evident, the University-Government relationship has deteriorated over the last twenty-five years. Oversight and control have increased at an alarming rate as both the Federal and state bureaucracies believed that stewardship needed to be strengthened. The responsibility for stewardship of Federal funds is not the sole responsibility of the Federal Government. It is a responsibility which must be shared by both partners -- the university and the Federal Government. However, universities must earn the "trust" through visible signs of accountability and by managing research in a manner which will allow scientists to become more productive in their research programs, while being more responsive to the needs of the sponsors (Federal Government). The sponsors on the other hand must understand that funding university research is not the same as the procurement of services from a defense contractor. The University-Government relationship must be and can be improved upon.

Senator Lawton Chiles, now Governor of the State of Florida, was instrumental in addressing the need to reduce paperwork with the sponsorship of the Paperwork Reduction Act of 1980 (PL96-511). Amendments to this law are to be considered in this Congress. Senator Chiles is a strong supporter of the Florida Demonstration Project and has worked closely with the members of the Project, helping to set the direction and guidance toward the successful implementation of the Project.

Also, since 1985, the Government-University-Industry-Research Roundtable of the National Academy of Sciences has worked closely with universities and federal agencies in an effort to overhaul the research support system and to restore "trust" between the universities and the Federal Government. This effort started in Florida when ten universities (nine from the State University System of Florida, and the

University of Miami) along with five Federal agencies (National Science Foundation, National Institutes of Health, Department of Energy, Office of Naval Research, and Department of Agriculture) set out to make changes in research grant administration that would ease the administrative burden on the principal investigators (scientists). This initiative became known as the Florida Demonstration Project. Through the FDP it was proven that by reducing the principal investigators' administrative efforts, research productivity was increased and a greater return of the research dollar to do science was accomplished. This was done without the loss of accountability. The effort in Florida was conducted for three years and proved to be very successful.

University and Federal agency participation in the FDP is strictly voluntary. No award, grant or contract, has been made to provide financial support for the Florida Demonstration Project or the continuing Federal Demonstration Project. All costs have been borne by the participating Federal agencies and universities. The participants have been willing to carry these costs because they all recognize that a change must occur and believe that the only way this will be done is by those concerned working together.

THE FLORIDA DEMONSTRATION PROJECT

Before I discuss the success of the Florida Demonstration Project, let me briefly explain the reason for the Project and describe the features of the Project.

Over the years, the research system had acquired many layers of administrative, management and financial procedures. This accumulation was the result of many individual actions that seemed appropriate at the time they were recommended by the Congress, the Federal agencies, state government, etc. and even our own universities. The procedures had significantly increased the administrative burden on the scientists and the universities to manage the research programs. Thus, there was a need to change the Federal Government/University research support system and to improve the research environment.

While these procedures were designed to ensure proper accountability of Federal funds, they were incongruent with the manner in which university scientists conducted their research. University scientists' research is long-term and multi-faceted while Federal grants and contracts are short-termed projects and provide only partial support for the scientist's research program. Funding agencies tend to support individual research projects rather than the principal investigator's overall research program. Further, funding agencies are constrained by statutes and regulations that require separate accountability of each project. It is, therefore, not surprising that the principal investigator became burdened by the administrative work that accompanied each of the individual projects. This increase in the administrative effort of the principal investigator had been at the expense of the research effort. The system clearly could not continue, as it was both inefficient and costly to the university and to the funding agency. The sponsors of university-based research must recognize the benefit of sharing in the support of the creativity of the principal investigator.

The Florida Project set out to streamline and reduce procedures by developing a set of grant administrative procedures that were more consistent with the way in which university research effort is conducted. These procedures attempted to

minimize the artificial fragmentation of the principal investigator's comprehensive research program. The objective of the Project was to provide greater management accountability to the principal investigator and to the university for the management of the research program; yet, at the same time, assure scientific and financial accountability. The Florida project allowed for accountability at the program level and allowed for the adjustment of budget categories within the total amount of the award to fit the needs of the research program, as determined by the principal investigator.

The FDP participants, all five federal agencies and the ten universities, entered into an Agreement and accepted a standard set of General Terms and Conditions for the post-award administration of research grants. It was not intended that the General Terms and Conditions would supplant OMB Circular A-21. However, they did modify certain sections of A-21 for purposes of the Demonstration Project. The participating universities were able to simplify and streamline research administration because the General Terms and Conditions:

(1) Eliminated Federal requirements for prior approvals, except for change of scope, principal investigator, and awardee institution.

(2) Allowed the university to approve pre-award costs up to 90 days.

(3) Allowed the university to approve one-time, twelve-month, no-cost time extensions.

(4) Allowed universities to carryover funds from one grant period to the next.

(5) Provided for "Project Relatedness".

The Florida Demonstration Project proved to be an unqualified success because it increased the principal investigators' research productivity and eliminated cumbersome and unnecessary Federal, state and university requirements. This was done with no decrease in accountability of Federal funds. Each university developed controls to ensure accountability and audit acceptance. In an audit/review conducted in October and November 1987, a Federal Interagency Review Team composed of nine representatives from the National Science Foundation, Department of Health & Human Services, National Institutes of Health, Office of Naval Research, and the Department of Agriculture concluded that the business and financial management systems in place at FSU adequately protected the interests of the government and that all systems were in compliance with agreements, terms and conditions and other requirements of the FDP. The Review Team's report (Attachment I) was quite complimentary of the University and its overall conduct of the FDP program. However, it was critical of the lack of efforts of the State of Florida to streamline its research administrative requirements. I'll discuss this in more detail in a later section of this statement.

OMB'S EXPANDED AUTHORITIES

On April 14, 1987, Senator Chiles, Chairman of the Subcommittee on Federal Spending, Budget, and Accounting of the Committee on Governmental Affairs, the

United States Senate, held a hearing on the Florida Demonstration Project on Research Productivity. Some of the recommendations made at that hearing helped set the stage for the expansion of the Florida Demonstration Project to the present Federal Demonstration Project.

On May 18, 1988, the Office of Management and Budget (OMB), as a result of the success of the Florida Demonstration Project and at the request of the Interagency Assessment Committee chaired by Dr. William Raub, Deputy Director, NIH, issued an authorization of "Expanded Authorities" to all agencies that waived provisions of OMB Circulars A-21 and A-110 relating to prior approvals and certain expenditures. The "Expanded Authorities" permitted all agencies to use the changes that had been successfully tested in Florida which were:

1. Elimination of Federal requirements for prior approvals, except for change of scope, principal investigator and awardee institution.

2. Allowance for university to approve pre-award costs up to 90 days.

3. Allowance for university to approve up to twelve-month, one-time, no-cost time extensions.

4. Permission to automatically carryover unexpended grant balances from one grant period to another.

Although the Demonstration Project has been successful and OMB has recognized the "Expanded Authorities", the "Expanded Authorities" are still not applied to all Federal research grants. The problem is that current government-wide guidelines on the administration of grants (OMB Circulars A-21 and A-110) still contain the approval requirements eliminated by the FDP and the "Expanded Authorities". Therefore, it is recommended that in keeping with the FDP and the OMB interest in promoting consistent government-wide practices for research grants, OMB guidelines should specifically provide for the use of the "Expanded Authorities" in research grants. This can be accomplished by amending the existing circulars or by the issuance of separate guidance relating to research grants.

THE FEDERAL DEMONSTRATION PROJECT

Under the leadership of the Government-University-Industry-Research Roundtable and the Interagency Assessment Committee the Project was expanded in October 1988 to include over eighty campuses and eleven Federal agencies and was renamed the Federal Demonstration Project. Since the inception of the Federal Demonstration Project, the Project effort has intensified and new demonstrations are being developed and conducted. The demonstrations include:

1. Non-Competing Renewal Proposals

2. Representations and Certifications

3. Equipment Screening

4. Documentation and Allocation

5. Rights in Data

6. Contracts

7. Financial Reporting

(A more detailed description of the demonstrations is contained in Attachment II.) Other demonstrations are being conceptualized and will be implemented when they have been fully developed and approved.

The Federal Demonstration Project Terms and Conditions (including the "Expanded Authorities") now applies to about one-third of all Federally sponsored individual research projects. A detailed analysis of the results of the FDP success is contained in a report, "The Impact Of The Use of Expanded Authority of the Federal Demonstration Project", dated February 1, 1991. (Attachment III)

There are many other demonstrations that need to be done but it takes time to develop and implement them. Agencies are sometimes reluctant to make changes and streamline procedures, for example, a demonstration to streamline financial reporting has been proposed but implementation has been delayed because of DHHS' attempt to increase financial reporting requirements even over the OMB Uniform Administrative Requirements (OMB Circular A-110), rather than streamline the current requirements. I understand that DHHS has submitted a request to OMB to permit them to obtain categorical reports of expenditures. This would be a big step backwards and runs counter to the objectives of the FDP. Furthermore, one of the other major Federal research agencies has been using the streamlined financial reporting system being proposed by the FDP for some time already and has found it to be acceptable.

As stated earlier, the Florida/Federal Demonstration Project started with one objective in mind -- increasing research productivity by decreasing unnecessary administrative requirements. However, as the emphasis on indirect costs escalated over the past years, many turned to this Project as a means of producing real cost savings. It was quite evident that, in the testing phase of the Project, there were cost savings associated with the elimination of prior approvals. However, let me caution that this should not be construed as an overall reduction in cost; rather as a means that would allow universities to perform more and better research and produce a better research environment for its principal investigators. Also, it could result in helping indirect costs to stabilize at the universities.

The Florida/Federal Demonstration Project is producing positive results in streamlining research administration. While the Demonstration Project was not designed to produce cost savings, it did demonstrate that by reducing unnecessary administrative requirements there were administrative cost savings. However, it is disturbing to note that in the last three or four years, there have been approximately twenty-five additional administrative requirements imposed upon research administration. This is a six-fold increase over our accomplishment in the Florida Demonstration Project where four administrative requirements were eliminated. It must be kept in mind that all administrative procedures require considerable administrative effort and cost by universities. Then, it is little wonder that the indirect cost rates are increasing. These additional administrative requirements relate to Drug-Free Workplace, Hazardous Waste and Materials, Scientific Misconduct, etc.

I do not question the need for these requirements because I believe they are appropriate. However, a mechanism must be found that will reduce the burden and the bureaucracy in both the universities and the Federal agencies in the management of these needed administrative requirements. The Federal Demonstration Project proposed a demonstration entitled, "Representations and Certifications" that would streamline these additional administrative requirements and help hold down the escalating costs that will surely ensue if the requirements are administered in their present form. However, the demonstration was suspended due to OMB concerns. The demonstration needs to be given an opportunity to show the benefits of the FDP in helping to reduce unnecessary paperwork.

Also, there needs to be a carefully coordinated effort between universities and government agencies that will allow a better understanding of indirect costs and will lead toward a recognized cost effective method of calculating indirect costs. Perhaps, this could also be a future demonstration of the Federal Demonstration Project. The FDP has the ability to test new and innovative ideas and can add to its membership to include all interested parties such as the Congressional staff and the auditing units of both the Department of Health and Human Services and Defense Contract Audit Agency. Although the FDP has been reluctant to study the indirect costs issue, I believe that it is time they seriously consider such a study(ies) and demonstration(s).

THE FUTURE OF THE FEDERAL DEMONSTRATION PROJECT

I believe the Federal Demonstration Project has a real role in improving the relationship between the universities and Federal Government. Clearly, it has established that it can effect change, a change that is beneficial to both the university and the Federal Government, without loss of accountability. There are still many areas that need to be studied, e.g., the escalation of administrative requirements, the issue of indirect costs, and the loss of "trust" between universities and the Federal Government and perhaps even between the university and the state government. The FDP can continue to serve as a forum for Federal and university partners to discuss development of research administration policies. However, the FDP needs to be formally recognized, not through legislation, but by administrative directive through the Office of Management and Budget. Universities, Federal agencies, state agencies, OMB and the Congress need to develop a coordinated effort that will allow us to pursue and seek solutions to such issues as grant cost, implementation of assurances, conflict of interest, current laws, executive orders, various federal and state requirements, etc. The efficiency of research administration (research policies) needs to be greatly improved before there is a serious deterioration of the total scientific effort in the United States.

STATE CHANGES???

Perhaps the most disappointing outcome of the Florida Demonstration Project, if indeed not a failure of the Project, was its inability to effect changes at the state level. The Federal changes mentioned earlier, along with numerous university changes in its research management, were a success and increased productivity of the principal investigator. However, many states, including Florida, have excessively burdensome processing and reporting requirements which diminish the benefits of

the Federal changes. If this is to be truly a coordinated effort among the Federal, university and state agencies, states must accept that the enhancement of research productivity comes from better management accountability. While some states are making improvements several others are not and continue to have various and profuse procedures and policies which affect not only their own funds, but Federal funds as well. The Florida/Federal Demonstration Project was initiated not only to limit bureaucracy between the Federal granting agencies and the universities, but also to include the third partner, the state agencies. The present Federal Demonstration Project studied the state problem and made a recommendation to officially endorse a state FDP effort that would target a discrete number of demonstrations. Coupled with this there should be an aggressive coordinated campaign to promote the Project among the Congressional delegations, state legislators, state officials, and state agency staff. Some possible target demonstrations to improve state relationships could include:

1. Develop and test standardized forms and procedures for applications.

2. Provide budget management accountability.

3. Simplify financial reporting.

4. Make timely payments.

5. Reduce micro-management. Significant administrative efficiency could be achieved through the design of standard grant terms and conditions that include the accountability controls (Expanded Authorities) tested in the Florida Demonstration Project.

6. Procurement Exception For Research Programs. Streamline procedures for purchase of research equipment and other research needs. (Buying a magnetic resonance is not the same as buying a cattle carrier.) Understanding the unique procurement of research activities could substantially enhance the productivity of research.

CONCLUSION

Oversight and management accountability may be receiving undue attention as a result of the indirect costs problems at one university as identified in this Hearing. We must be careful to keep these problems in proper perspective so that there is not an overreaction for that would be a bit like hiring a baby sitter and fretting about the silver being stolen but not worrying about the welfare of your kids. We are letting the researchers we support be responsible for our nation's priceless scientific and economic future, but we seem to be placing inordinate emphasis on counting and re-counting the silver. Have the more flexible and streamlined FDP conditions hurt scientific productivity? No, just the opposite, it has been demonstrated that they have enhanced them. Have the FDP changes increased scientific fraud? No, in fact, accountability at all levels (Principal Investigator, Program Officer, etc.) has been strengthened. We have become so distracted by the minutiae that are easily visible by "control" that we have overlooked the real purpose of oversight -- increased research productivity and overall quality of the national research program.

ATTACHMENT I

DEMONSTRATION AGREEMENT SYSTEM REVIEW REPORT
FLORIDA STATE UNIVERSITY

Conducted by

FEDERAL INTERAGENCY REVIEW TEAM

in conjunction with the Florida Demonstration Project

October - November 1987

DEMONSTRATION AGREEMENT SYSTEM REVIEW REPORT

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This report may not be released outside the Federal Government without approval of the Office of Naval Research.

Florida Demonstration Project

Pilot Demonstration Agreement System Review

Florida State University

I. Introduction

During the period 26 October through 4 November 1987 federal representatives conducted a 'Pilot' Florida Demonstration Agreement System Review (DASR) at Florida State University (FSU), Tallahassee, Florida. The Office of Naval Research (ONR) led the government team which consisted of representatives of other agencies participating in the Florida Demonstration Project (FDP) and the Department of Health and Human Services, Office of Inspector General, Office of Audit (HHS IG). The participating FDP agencies joining the on-site review included the National Science Foundation (NSF), the National Institutes of Health (NIH) and the United State Department of Agriculture (USDA). A full listing of agency representatives is contained in Appendix A, hereto. Active participation in the review was provided by staff members of the Florida State University Office of the Vice President, Graduate Studies and Research, Office of the Director, Contracts and Grants. An entrance conference was held on 21 October 1987 attended by federal representatives, university officials, members of State University Board of Regents, and members of the FDP Steering Committee. Appendix B lists those attending the entrance conference. During the review, DASR team members met with each of the FSU officials who attended the entrance conference. An exit conference was conducted on 4 November 1987 with the Dean of Graduate Studies and Research and members of his staff during which the review team discussed the DASR findings.

II. Purpose

The purpose of the DASR is to provide participating federal agencies with a thorough knowledge of the institution's policies and procedures related to the FDP. Such knowledge and understanding is necessary to insure that the institutions fully comprehends and has adequately addressed its new and increased responsibilities under the FDP including approval authority for specific actions which historically have been retained by the federal sponsor. This review has been dubbed a 'Pilot' DASR since it is the first of such reviews conducted specifically in conjunction with the FDP. It is expected that this review will lead to refinements in the review process employed in the future. It is also expected this initial DASR and those to follow will ultimately provide: (1) assurance to the federal establishment and to the public that the FDP offers an opportunity for improvements in the administration of federally sponsored research awards, (2) an increase in the confidence of nonparticipating agencies which will assist in gaining the support and participation in FDP based programs, and (3) documentation on which to base further reductions in

university and state policies and procedures which are over and above those required to insure appropriate stewardship of federal research dollars.

III. Scope

The DASR was a thorough analysis of the institution's business and financial management systems to determine overall adequacy and compliance with the requirements of the demonstration agreement, the FDP general terms and conditions and agency specific requirements. The review is performed in compliance with Article 4 of the demonstration agreement. Sections V through XII of this report provide details on the following areas included in the DASR:

Financial Management Systems
Procurement Management System
Property Management System
Patents
Research Program Management
Administration of FDP Awards
State and University Administrative Requirements

IV. Summary of Findings

As a result of this review, the DASR team concluded that the business and financial management systems in place at FSU adequately protect the interests of the government. It was further concluded that those systems are in compliance with the agreements, terms and conditions and other requirements of the FDP.

The DASR team commends FSU's efforts to streamline its internal and external administrative process. The team notes, however, with disappointment that the FDP has not led to substantial relief from state requirements which are considered over and above those required to adequately administer federally sponsored research programs. Section XI of this report contains a listing of state requirements considered excessive, costly to administer and which add little in terms of quantity or accountability to sponsored research programs. We encourage FSU to continue its efforts to obtain relief from these requirements. We stand ready to assist in this endeavor.

The procurement system review and the property system survey performed in conjunction with the DASR resulted in approval by ONR of those systems. Specific recommendations aimed at further enhancing FSU's procurement and property systems are set forth in the reports of these reviews by the ONR. The institution's programs implementing the recommendations will be monitored by the ONR administrative contracting officers.

In the area of sponsored project administration, FSU's Sponsored Project Manual is not current in all areas and is under

revision. Understandably, FSU has issued policies and procedures for implementation of the FDP by memorandum and is holding in abeyance major revisions of the manual pending the outcome of the project. The DASR team is concerned, however, that the outdated information and references in the current manual may lead to improper or errant interpretation of federal or agency specific policies and procedures. It is recommended, therefore, that FSU review for currency its policies and procedures and issue appropriate revisions, thereto.

Instances of untimely project report processing were noted in the university's independent audit report and by members of the DASR team. The DASR further revealed that while financial reports may occasionally be late, the contract and grants office does notify the awarding agency in advance of the due date of the anticipated delay and expected submission date. The contract and grant office does not, however, monitor project reports (other than financial) to insure timely submission. Officials in that office believe that a project report monitoring system would be costly to develop and time consuming to operate. The DASR team did not determine the frequency of untimely reporting and, therefore, is hesitant to strongly recommend the need for a monitoring system. It is suggested, however, that FSU should perform additional study this area as it may lead to further improvement of FSU's sponsored project administration.

V. Financial Management System

Article 19 of the FDP terms and conditions requires that the recipient maintain a financial management system which, at a minimum, meets the requirements of Attachment F to OMB Circular A-110. Included in this scope is Attachment G of OMB Circular A-110, "Financial Reporting Requirements," which are referenced in Attachment F thereto and the financial aspects of the recipient's personnel management system.

The scope and methodology for review of FSU's financial management systems resulted from a working meeting of DHHS OIG and ONR staff members held in Atlanta in September 1987. The baseline for these discussions was a comprehensive DASR plan drawn up by the staff of ONR. All agreed that a guiding principle would be that DASR would not duplicate work performed by the independent auditor. The State of Florida, Office of the Auditor General performs the independent audit function under OMB Circular A-128, "Audits of State and Local Governments." The audits of state universities, performed in accordance with OMB Circular A-110, are included in the overall State A-128 Audit Report. The cognizant federal audit agency for A-128 audits is the Department of Education, Office of Inspector General, Office of Audit (DOEd IG).

The State of Florida Auditor General has provided continuous audit coverage at FSU. DHHS contact with the DOEd IG revealed that the A-128 audit report fiscal year 1985 was subjected to a

quality control review by a joint team of federal auditors led by the cognizant audit agency. The team noted that extensive effort was evident in the work reviewed and concluded that government audit standards were met. Both the FY-85 and FY-86 A-128 audit reports were accepted by the cognizant federal audit agency.

During the week prior to the on-site portion of the DASR, the HHS IG site auditor in charge and a representative of ONR visited the Office of the Florida Auditor General in Tallahassee. The purpose of their visit was to review the reports and working papers pertaining to the FSU portion of the FY-85 and FY-86 audits in order to determine the overall scope of the audits and, to become familiar with, and determine the status of FSU's internal controls and overall financial management systems. In addition to the review of the Florida Auditor General's working papers, the financial management area of the DASR included:

(1) meeting with the FSU internal auditor regarding the DASR and the scope of recently completed and planned internal audits and reviewing certain internal audits;

(2) interviewing administrators in the FSU Contracts and Grants office who were responsible for day to day operations under the FDP;

(3) reviewing existing FSU Contracts and Grants policies and procedures and the new procedures developed to implement the FDP;

(4) interviewing principal investigators and departmental administrators who are operating under the FDP;

(5) reviewing FDP grant files to determine whether FDP transactions authorized, adequately supported and in accordance with established procedures; and

(6) reviewing accounting records and tracking selected grant costs to source documents to test expense accountability and determine if costs were adequately supported.

It should be noted that the review of Florida Auditor General's work and items (1) through (6) above constitute a scope which extends beyond Financial Management into areas covered in other portions of DASR. To the extent possible the results were separately reported under those topics, i.e., Sponsored Project Administrative and FDP Administration, however, some duplication does occur in the report.

The examination of Florida Auditor General's working papers found that a significant effort was devoted to FSU and that the audits encompassed the main areas of concern to the DASR. A study of internal controls was performed and the administrative and accounting controls were found to be adequate. Additionally, compliance tests were performed in areas including grant

expenditures, matching, cost sharing, cost transfers, indirect costs, payroll and personnel, and fiscal reports. These tests indicated some minor deficiencies such as instances of untimely project report processing, however, no costs were questioned. The Florida Auditor General's results indicated that FSU administered federal contracts and grants in accordance with applicable regulations. No material deficiencies were disclosed in FSU financial management systems relative to the administration of federal awards. In general, the Florida Auditor General determined that FSU has adequate financial controls in place to properly administer federal awards. Nothing in the review of the audit reports and working papers came to the reviewers' attention which would detract from this conclusion. The on-site portion of the review concentrated on the changes implemented by FSU to implement the FDP. The Contracts and Grants office has developed written procedures to address several aspects of the FDP. The procedural changes are discussed in Section X of this report.

In addition to procedural changes, the Contracts and Grants office has implemented some changes in accounting practices for FDP grants, however, for the most part accounting practices and procedures have remained the same as those used for non-FDP grants. The major change in accounting procedures is that expenses under FDP grants are accumulated in the departmental ledger in two broad categories, total direct costs and total indirect costs. Direct costs were not accounted for by budget line and grant budgets were not recorded in the departmental ledger. This accounting change makes it more difficult to relate actual expenses to the grant budget. Observations and reviews of the departmental ledger by the DASR team member found, however, that grant expense accountability has been maintained. Further, costs in the departmental ledger are traceable to source documents supporting the costs.

VI. Procurement Management System

Article 20 of the FDP terms and conditions requires the participating institution to maintain a procurement system, which at a minimum meets the requirements of Attachment O to OMB Circular A-110, and which in its essential elements, remains as approved by the Office of Naval Research. Procurement System Reviews are conducted by ONR at educational institutions in accordance with the Federal Acquisition Regulation (FAR), Subpart 44.3 and the DoD FAR Supplement (DFAR), Subpart 44.3 and Supplement 1, thereto. The procurement system review reports are distributed at a minimum to the cognizant federal audit agency, to activities prescribed by the cognizant agency and to the institution.

FSU's volume of business with the Federal Government dictates that reviews be conducted no less frequently than triannually. ONR maintains surveillance of the procurement system in the interim years. The FSU procurement system was last reviewed by ONR in May of 1985. The system was approved at that

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time, however, the reviewer recommended several improvements, refinements and additions to be implemented. Follow up action was included in the ONR administrative contracting officers surveillance plan.

The Florida Auditor General's working papers did not indicate that a study was performed of the procurement system during the FY-85 audit. For this reason and because 30 months have passed since the last ONR review, it was deemed appropriate to perform a complete procurement review in conjunction with the on-site DASR. The review was conducted by ONR DASR team members to include the ONR Administrative Contracting Officer for FSU. Assistance in performance of the review was provided by the USDA DASR team member.

The procurement review encompassed a complete evaluation of the recipient's purchasing system. The review consisted of several components which included:

(1) an assessment of the recipient's written procedures established for the purchasing and subcontracting functions;

(2) interviews with the recipient's contracts and grants management personnel, the purchasing director and buying personnel to gain information concerning the effectiveness of the purchasing operation; and

(3) an assessment of randomly selected purchase order and subcontract files to determine recipient's compliance with internal policies and procedures as well as to assess trends in the selection of and performance of vendors and subcontractors.

As significant purchasing authority involving federal funds is delegated to the Director, Contracts and Grants a separate sample was developed for review and evaluation of subcontract placement and administration. All thirteen active federal subcontracts issued during the previous twelve month period with a value of one hundred thousand dollars or over were reviewed.

The review report recommends that the ONR ACO approve the FSU procurement system. The ONR ACO was further requested to develop a surveillance plan with FSU aimed at improvement in the following areas:

(1) sole source justifications,

(2) cost and price analysis on noncompetitive procurement,

(3) flow down provisions of federal agreements in purchase orders and subcontracts, and

(4) visibility and tractability of the equipment prescreening process.

VII. Property Management System

Article 16 of the FDP terms and conditions requires that the recipient maintain a property management system which, at a minimum, meets the requirements of OMB Circular A-110, and which, in its essential elements remains as approved by the Office of Naval Research. Property system surveys are performed by ONR as required by FAR Subpart 45.104 and conducted as prescribed by Supplement 3 to the DFAR. The FSU property management system was last reviewed in conjunction with the May 1985 procurement management review. At that time FSU's system for control of federal property was found to be adequate for the protection of the government's interest. For the same reasons discussed under the Procurement Management, Section VI, it was appropriate to include a property management survey in the DASR.

The prior ONR Property System Survey, including follow up actions, thereto, and the Florida Auditor General's report for FY-86 were reviewed in preparation for the survey. The survey encompassed special test equipment and plant equipment. In addition to review of FSU's written property procedures, the survey included an evaluation of the following areas: property records; storage and movement; utilization; maintenance; and physical inventories. Interviews were conducted with the property administrator and the property clerk. The acquisition and receiving of property were included in the procurement management review. The sample, which was selected using the table of random numbers in Supplement 3 to DFAR, included:

1. Property purchased with contract or grant funds for which title remains with the government,

2. Property which was either government furnished or purchased with contract or grant funds for which title is vested with the recipient; and

3. Property furnished by the government for which title remains with the government.

The property system survey determined that FSU's system for property control in adequate for protection of the government's interests. The review did, however, indicate a need for FSU to update its policies and procedures for control of government property. In addition to several specific areas noted in the property system survey report, it was recommended that a complete internal review of FSU's procedures in this area be conducted. The ONR ACO will monitor FSU's progress in this area.

VIII. Patents

Article 24 of the Demonstration Agreement's General Terms and Conditions requires the institutions to have an active program on patents. The DASR examined FSU's patent program to insure that institutional procedures for ensuring that:

1. Inventions are identified, disclosed, and elections made within the time constraints of Article 24;

2. Patent applications are timely filed, tracked and prosecuted when appropriate;

3. Formal instruments are executed conveying rights in subject inventions, when appropriate; and

4. A process is in place to monitor and influence or cause expeditious practical application of subject inventions.

FSU's collective bargaining agreements and faculty appointment letters include provisions which address the rights of individuals and the institutions in regard to patents and royalties resulting therefrom. The Legal Council on the staff of the VP for Research and Graduate Studies provides assistance on patent matters. Commercial firms are employed to prepare patent applications. Outreach agreements are established with departments who are most likely to patentable inventions. The sponsored projects office circulates materials related to patents. In addition, the sponsored projects office uses articles in its publications to provide information on patents.

The review team concluded that FSU's patent program meets the criteria stated above.

IX. Research Program Administration (General)

The area addresses the institutional organization(s) and underlying administrative processes governing sponsored agreements from proposal preparation through final payment. DASR team examined the institution's research program administration's general policies, procedures and practices to the extent that these areas are not covered in other sections of this review, e.g., subcontract/subagreement management, property, funds management, etc. The review elements included the following:

1. Preaward

   a. Institutional research policy
   b. Commitment authority
   c. Proposal pricing procedures
   d. Negotiation
   e. Award instrument review and execution

2. Post award

   a. Agreement review and administration
   b. Recipient's internal approval system
   c. Reporting and deliveries agreement amendments

3. Post completion

a. Final reporting - Technical, patent
b. Funds management
c. Final billing
d. Record maintenance and retirement

FSU's research program policies and procedures are set forth in the Sponsored Project Manual. The manual was not current in some areas related to federally sponsored programs and was undergoing revision at the time of the DASR. A number of policy and procedural memoranda have been issued by the VP for Research and Graduate Studies and the Director of Contracts and Grants (C&G). These memoranda provide interim updates for some of the areas under revision and in some cases provide implementation policies and procedures for the FDP. Research program administration at FSU is centrally managed and controlled by the Contracts and Grants office, which reports to the VP for Research and Graduate Studies.

1. Preaward

a. FSU's research mission and functions are embodied in the Statutes of the State of Florida. The university encourages research in a variety of disciplines. Research is supported by the State and by contracts and grants from foundations, industry and government research agencies.

b. Commitment authority is delegated to the Director, C&G.

c. Proposals are processed through department chairman to the Director, C&G. The staff of C&G review all proposals with respect to pricing, financial and business considerations. Legal assistance as necessary is provided by council on the staff of the VP for Research and Graduate Studies. All proposals are signed by the VP for Research and Graduate Studies or the President of the University.

d. Negotiations are conducted by the C&G staff. Contact is permitted between federal officials and PIs, in the preaward process, however, these discussions are considered preliminary to negotiations.

e. All research awards are reviewed by C&G prior to acceptance by the institution. PIs are given the opportunity to review pending award instruments which contain provisions or requirements beyond those normally required in federally sponsored agreements. Only the VP for Graduate Studies or the President of the University may sign award instruments.

2. Post Award

a. The C&G staff reviews all award agreements and insures that budgets are properly reflected in the departmental ledger. Post award administration is the responsibility of the C&G staff.

b. Internal approval and contract procedures also are focused in the C&G staff. The policies and procedures include a hierarchy of review approval by department heads, legal council and the VP for Research and Graduate Studies, as appropriate.

c. Technical reports are the responsibility of the PI. Interim technical reports and other deliverables are periodically monitored by the C&G office only to the extent to which they are linked to payments due under provisions of the award. Financial Status Reports (SF 269s) are the responsibility of the C&G staff. Projected delays in submission of the 269s are reported in advance to the sponsoring agency.

d. Submission of final papers (technical, patents, property, financial, etc.) is requested in advance of the due date by the C&G staff.

e. Final accounting of all costs and funds received is reviewed by the institution and, together with refunds for the unexpended balance, if any, is submitted to the sponsoring agency within the periods provided for in OMB Circular A-110.

f. The institution retains sponsored agreement records in accordance with Attachment C of OMB Circular A-110 and the state regulation. The institution uses microfilm in lieu of original copies to the extent permitted by state recordkeeping requirements.

3. Other

In addition to the review areas discussed above, the DASR team noted that the C&G staff and to some extent the office of the VP for Research and Graduate Studies perform other duties which appear to be beyond the scope of sponsored research or which may fall within the functional responsibility of other organizational elements of the institution. These duties involve the areas of accounting and personnel. In addition, certain State of Florida approval thresholds are lower than those required by the Federal Government. These items are further addressed in the section of this report dealing with FDP Implementation and State and University Requirements.

The DASR team was satisfied that research program administration at FSU, as embodied by the overall organization and by the policies and procedures promulgated by the Vice President for Research and Grants, is adequate in regard to compliance with federal regulations and the terms and conditions

of research awards. Management emphasis in sponsored project administration, however, goes beyond compliance with federal, state, and university administrative requirements. It was evident that these organizations seek to assist and promote the efforts of principal investigators in pursuit of their research objectives. In this regard, it is recommended that FSU expeditiously proceed with updating its Sponsored Projects Manual in order to insure that its users are kept current on federal policies and procedures. It was noted that the procedures do not provide for notifying PIs of upcoming due dates for in progress reporting under sponsored programs. Further, some instances of untimely reporting were found by the state auditors and by members of the DASR team. This issue was discussed with sponsored project personnel who believe that such a system would be costly to develop and administer. Without such a system, however, the sponsored project office must work on an exception basis and react to agency's inquiries about overdue reports. It is suggested that FSU study this area to determine whether a monitoring system may, in the long run, be more effective.

X. Administration of FDP Awards

Under the FDP, institutions gain new and increased authorities and responsibilities historically retained by the sponsoring agencies. These new authorities and responsibilities necessitate that the institution have in place, or develop, sufficient policies and procedures to insure that timely, prudent internal business decisions are made in the administration of FDP awards. A principal goal of the FDP is to reduce administration to the extent possible without sacrificing accountability. To the extent, therefore, that an institution's pre-FDP policies and procedures are adequate to insure reasonable accountability, additional layers of review are not desirable. Section E of this report addresses the institution's Research Program Administration which are in place. This section addresses additions to, or changes in policies, procedures and guidance implemented for FDP awards.

Of particular interest were provisions addressing the following FDP Terms and Conditions:

1. Programs of Related Projects (Article 3)
2. Preaward Costs (Article 14)
3. Extensions without Additional Funds (Article 15)
4. Equipment and Real Property (Article 16)
5. Alteration and Renovation (Article 17)
6. Unobligated Balances and Limit of Federal Liability (Article 22)

Shortly after initiation of the Demonstration Agreement, a memorandum entitled "Implementation of the Florida Demonstration" was sent by the Vice President of Research and Graduate Studies to all Deans, Directors, Departmental Chairpersons and Principal Investigators. The memorandum —

summarized the key features of the FDP in addition to providing guidance on the changes in the administration of federal awards resulting from the project. The memorandum addressed all the provisions of the FDP terms and conditions cited above as well as all other prior approval requirements of A-110 and A-21. Specific prior approvals by the Vice President or the Director, Contracts and Grants are eliminated except for the following:

1. Preaward costs - FSU approval
2. Change in scope - FSU/Agency approval
3. Additional funding - FSU/Agency approval
4. No cost extensions - FSU approval
5. Termination for convenience - FSU/Agency approval
6. Disposition of Federally owned property - FSU/Agency approval

The memorandum provides a form and instructions requesting prior approvals in these areas. Also described is the changes in the recording of grant budgets in departmental ledger and the requirement for prior approval for rebudgeting from direct costs to indirect costs and vice versa. One additional area discussed is the need to be aware of agency specific and award specific requirements.

It is important to note that elimination of specific prior approval requirements by FSU did not eliminate other internal controls which are integrated into FSU administrative, financial, procurement, property and other business procedures. As an example, foreign travel requires the approval of the employee's supervisor, usually a departmental chairperson. The foreign travel request then must be processed using the FSU and state travel procedures. In addition, all expenses to be charged to sponsored agreements must be approved by C&G. The principal impact was, however, on the specific prior approval requirements which previously were through C&G and/or the Office of the Vice President for Research in route to the sponsoring agency (or for specific prior approval by C&G or the VP under NSF OPAS or NIH IPAS). Some changes to the internal FSU or state procedures which impact all federal awards have been initiated in the spirit of the streamlining efforts of the FDP. These are discussed further in Section XI of this report.

It was the opinion of the DASR team that policies and procedures, developed and implemented by the FSU for the FDP, do provide for timely and prudent internal business decisions in administering sponsored agreements awarded pursuant to the FDP terms and conditions. Further, the Vice President for Research and Graduate Studies has taken steps to insure that PI concerns and suggestions on the FDP and on sponsored programs in general are heard. One such step was the establishment of a telephone hot line as a convenient communication alternative.

XI. State and University Administrative Requirements

An important premise of the FDP is that the reduction of administrative requirements is not solely the responsibility of the federal agencies. Universities and state governments often have policies and procedures which overlay, and are in addition to the federal requirements. An important goal, therefore, of the FDP is to identify, and to eliminate when possible, redundant and unproductive state and university requirements. This section addresses those state and university requirements identified through the DASR process to the extent possible what streamlining has been accomplished or attempted.

As an institution in the Florida State University System (SUS), FSU operates under state statutes, and under rules and regulations promulgated by the SUS, by the independently elected State Comptroller and by other state agencies. While statutes enacted by the state legislature do give preferential treatment in some respects to institutions of higher education, in many other areas those institutions are regulated in the same manner as other state agencies. It is obvious therefore that the reduction of administrative requirements on federally sponsored projects is not a matter solely between the institution and the federal agencies. Further reductions in administrative requirements and improved efficiency in managing federal awards are beyond the control of these principals and in fact would require a concerted and cooperative effort of the institution, the SUS, the state legislature, the state comptroller and the Governor.

The DASR team found that reductions in administrative requirements, streamlining and improvements in overall administration of federal awards has been accomplished, but only at the institutional level and principally within those operations which can be influenced by Vice President of Research and Graduate Studies and by the Director, Contracts and Grants. The changes implemented for FDP awards are discussed in the preceding section of this report. Additional streamlining has been accomplished by these offices in regard to processing general requisitions on all contract and grant accounts. Efforts are also under way within the institution to further extricate the Contracts and Grants office from involvement in personnel functions relating to appointments funded under contracts and grants.

While further fine tuning by the institution may provide additional efficiencies, it is apparent that the administrative requirements most in need of streamlining lie outside the control of the institution. A number of overburdensome outside requirements were easy to identify during a review of FSU's business systems. It is the opinion of the review team that these requirements are excessive, costly to administer, and add little in terms of quality or accountability to federally sponsored programs. The following is a list, not all inclusive, of

requirements or processes which should be addressed at the appropriate levels of the State University System and the State Government:

1. The thresholds for competitive bidding ($2,500.00) is too low. A less formal process for acquiring competitive prices, similar to that used for federal small purchases is needed.

2. Board of Regents approval is required for contracts in excess of $500,000.00.

3. Subcontractors are required to provide detailed documentation to support billings.

4. Subcontractors are required to comply with Florida Travel Statutes, including detailed documentation of travel costs.

5. The threshold for approval of communication equipment, by the Division of Communication, is $400.00.

6. The purchase of all audio research equipment and copying equipment requires approval by the Department of General Services.

7. The threshold for capitalization of property is $200.00 and $25.00 for hardback books.

8. Use of the State Automated Accounting System is not efficient or effective in supporting sponsored projects.

9. State Comptroller requirement for review and approval of expenses prior to payment is duplicative and inefficient for subcontract, subaward, administration.

10. All accounting documents must be approved by the Office of Contracts and Grants.

The review team recognizes the efforts of FSU, along with other participating Florida universities, to obtain relief from these and other bureaucratic requirements. It is fair to say, however, that the efforts of the participating federal agencies in attempting to improve and streamline the approach to sponsored research administration has not been matched by the State of Florida.

Appendix A

FSU DASR Team Members

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Appendix B

DASR FSU Entrance Conference

Federal Attendees

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ATTACHMENT II

DESCRIPTIONS OF FDP DEMONSTRATIONS: THOSE IMPLEMENTED AND THOSE BEING DEVELOPED

DESCRIPTIONS OF FDP DEMONSTRATIONS: THOSE IMPLEMENTED AND THOSE BEING DEVELOPED

1. **NON-COMPETING RENEWALS:** On July 15, 1989 the first demonstration under the Federal Demonstration Project began. Many research grants are multi-year awards. Currently, at most agencies, funding for the out-years of grants must be triggered by an application process of some kind. Each agency has its own procedures, and some are more detailed than others. The demonstration provides a standardized and simplified process. Under this process, grant recipients simply have to submit a technical progress report of no more than four pages, revised budget information IF there are significant changes in the originally estimated cost for the project period, and reprints of any articles on work supported by the grant. Some agencies have a few additional stipulations. The demonstration will run until September 30, 1991.

2. **REPRESENTATIONS AND CERTIFICATIONS:** Currently, most proposals for federal support of research must be accompanied by several institutional certifications and assurances in areas such as: civil rights, debarment and suspension, and most recently, maintenance of a drug-free work-place. The FDP proposed a demonstration that would allow institutions to comply with the requirement to supply most such certifications and assurances through a single, institutional, representation. The consolidated certification would have been good for at least one-year. Certifications having to do with the protection of human subjects, humane care of animals, and flood disaster protection would still have been supplied with each proposal submitted.

   The demonstration was initiated in July 1989 but was withdrawn that September due to U. S. Office of Management and Budget concerns about violation of regulations that require submission of certifications on a grant-by-grant basis.

3. **EQUIPMENT SCREENING:** A demonstration on equipment screening was initiated on April 1, 1990. Current procurement standards require schools to screen for similar available equipment before purchasing any item that falls under the definition of equipment in federal regulations (currently, that includes items over $500). There has been no evaluation to determine if screening saves enough funds through prevention of the purchase of redundant items to warrant the cost of the screening process. The demonstration raises the threshold for requiring screening to $10,000 and, through a survey, will gather information useful for determining the effectiveness of equipment screening. The demonstration will run until March 31, 1991.

4. **DOCUMENTATION AND ALLOCATION:** On July 15, 1990, the FDP started a demonstration of changes in the principles used to determine whether a cost is allocable to a research grant. The changes allow more flexibility in how costs that benefit more than one grant can be charged. In essence, under the demonstration, a principal investigator treats his program of research as an undifferentiated unit for cost accounting purposes. This change should reduce audit disagreements about many cost transfers and should enhance research continuity. Part of the impetus for this demonstration is to find a better way to address the issue of relatedness. (See Relatedness demonstration

described). The demonstration also provides for agreement between agencies and institutions on the minimum standards for institutional review and documentation of costs charged to federal grants. The demonstration will run until July 14, 1992.

5. RIGHTS IN DATA: The general terms and conditions demonstrated in Florida did not contain an article on rights-in-data. A uniform article on rights-in-data has now been developed and was included in the general terms and conditions on July 15, 1990.

6. CONTRACTS: The terms and conditions implemented as a result of the Florida Demonstration Project apply only to grants. A proposal for a subset of FDP institutions and agencies to use similar terms and conditions with contracts is near completion.

7. FINANCIAL REPORTING: In October 1989, an FDP Task Group on Financial Reporting was convened. The Task Group is in the process of developing financial reporting requirements that satisfy federal requirements for oversight and accountability but impose the minimum paperwork burden on grant recipients. The aim is to test a prototype set of standardized and streamlined financial reporting requirements.

ATTACHMENT III

THE IMPACT OF THE USE OF EXPANDED AUTHORITIES WITHIN THE FEDERAL DEMONSTRATION PROJECT

THE IMPACT OF THE USE OF EXPANDED AUTHORITIES WITHIN THE FEDERAL DEMONSTRATION PROJECT

A Report of the Productivity/Assessment Task Group

of the Federal Demonstration Project

February 1, 1991

FORWARD

The results described in this report are based on a survey undertaken by the Productivity/Assessment Task Group of the Federal Demonstration Project (FDP). The FDP is being carried out with assistance from the Government-University-Industry Research Roundtable (GUIRR) of the National Academy of Sciences.

The Task Group has been fortunate in having helpful suggestions from agency and institutional representatives alike, as well as from members of the FDP Steering Committee and the Interagency Assessment Committee of GUIRR. Naming names would risk slighting someone, so suffice it to say that the authors of this report are only taking credit for putting together the materials over which the entire Task Group has labored strenuously. What has been accomplished has been done by consensus, and not every viewpoint could be fully incorporated in the finished survey product. Throughout the development of the survey instrument, expert opinion was sought. Early advice from Dr. Ward Edwards, Director of the Social Science Research Institute at the University of Southern California, provided a schematic for looking at faculty productivity and the suggestions of Dr. Detlof von Winterfeldt, Professor of Safety and Systems Management specializing in Decision Systems - also of the University of Southern California, led to the model of measuring Principal Investigator time saved and reinvested. We are also deeply indebted to Thelma Monski and the staff of the Survey Research Center of the University of California at Berkeley who gave suggestions on the overall questionnaire. To all who have participated, you have in some way made the project better.

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THE IMPACT OF THE USE OF EXPANDED AUTHORITIES WITHIN THE FEDERAL DEMONSTRATION PROJECT

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HIGHLIGHTS

THE IMPACT OF THE USE OF EXPANDED AUTHORITIES WITHIN THE FEDERAL DEMONSTRATION PROJECT

Some of the findings of the survey:

* 2,501 PIs reported that they saved time
* only 121 of the affected PIs did not save time
* individually PIs saved:
  - in excess of 5 days, amounting to 2 % of their annual effort,
  - reducing the time spent on administrative tasks by approximately 15 %
* collectively PIs saved:
  - 13,722 days or 53 person-years of effort
  - of which 12,222 days or 47 person-years of effort
  - were reinvested in scholarly activities (89 % of time saved)
  - of which 10,011 days or 38.5 person-years of effort
  - were reinvested in research (73 % of time saved)
  - Extrapolating from the rate of return the amounts can be roughly doubled to measure the impact on all FDP PIs
  - Further extrapolating from the FDP PIs to all PIs funded by Federal sources, the numbers can be increased **six-fold**
* additionally PIs pointed out that:
  - the flexibility necessary to maximize the effectiveness of their Federal research dollars is being restored and
  - that we are changing the culture by breaking the constraints of annual cycles of funding

EXECUTIVE SUMMARY

THE IMPACT OF THE USE OF EXPANDED AUTHORITIES WITHIN THE FEDERAL DEMONSTRATION PROJECT

When we set out on our mission two years ago, we wanted to accomplish two things: expand the Demonstration to a larger National project with the same level of effectiveness and efficiency that had developed in Florida, and to confirm what had been experienced in Florida -- increased scientific productivity as a result of cutting the red tape of research administration.

We have accomplished both objectives with rather extraordinary outcomes. The project has easily scaled up to a National effort involving 28 academic institutions (four of which are large multi-campus state-wide university systems), a private research institute, 11 federal agencies, the Interagency Assessment Committee, the Government-University-Industry Research Roundtable and the Office of Management and Budget. The Florida institutions continue to be a primary site for new demonstration projects. Their earlier participation in the expanded authorities elements of the FDP precluded their inclusion in our current study, which is why they will not be found among the institutions whose data is presented in the appendices.

In Florida, we clearly saw that time was being saved by trimming administrative tasks which were not adding value to the process. What we did not have in Florida was strong empirical evidence indicating that the effort saved was translated into scholarly activities.

Not only has the project expanded successfully; it is now providing the much needed confirmation that released time is indeed being channeled into scientific and research productivity. Clearly it is no longer necessary for us to rely on a line of reasoning as to what the scientific community is doing with time that previously had been consumed by red tape.

This report caps two years of streamlining, simplifying, testing and monitoring our approach to Federal support of research. The results have been overwhelming. We saved time for 2,501 participating PIs. Though this result was not unexpected, the magnitude of the results was an unknown going in to the project. Individually, PIs saved annually in excess of 5 days. This amounts to a 2% savings in their yearly effort. With PIs claiming they allot 10% to 20% of their time to administrivia required by the conditions of federal sponsorship, this savings translates to a 15% reduction in time spent on administrative tasks. And what is even of more import is that we are talking about only the four "expanded authorities" provisions made available to all federal agencies at the beginning of the Federal Demonstration Project.

Collectively, participating PIs saved 13,722 days or 53 person-years of which 12,222 days were reinvested in scholarly work. This is an 89% reinvestment. Clearly some 10,011 days were redirected to research. In other words, in excess of 73% of saved time was reinvested in research.

Through our participation in the project on our campuses and talking with our PIs about the outcomes they are experiencing, we are becoming increasingly aware of the tremendous amount of positive support for the work being done to improve the research funding process. Our PIs love what we are doing. We are all hearing that the effort by the Roundtable, participating agencies, participating universities and research organizations, the Interagency Assessment Committee and OMB -- is giving PIs the flexibility to make the best possible decisions about how we invest Federal research dollars.

Perhaps what we all appreciate most is what is being said about our work outside our own inner circle of participants. Many of our friends and associates are talking about how we are changing the culture. They are already talking about how the pre-award and extension initiatives are assuring smooth starts and making it possible to extend where and when we should. These same folks will soon be talking about carry-forward fungibility and simplified non-competing continuation applications enriching our culture, by breaking the constraints of annual funding cycles.

We are off to a great start with much remaining to be done.

THE IMPACT OF THE USE OF EXPANDED AUTHORITIES WITHIN THE FEDERAL DEMONSTRATION PROJECT

BACKGROUND

In September, 1988, representatives from the universities and research foundations selected nationally to become part of the new Federal Demonstration Project (FDP) met in Orlando, Florida. It did not take them long to fulfill William Raub's notion on productivity as presented in his paper entitled "Cutting Red Tape on Research" which appeared in the Winter 1988-89 issue of **Issues in Science and Technology**.

> The quest for means to measure productivity takes the project into a complex and controversial domain. Consensus won't come easily, but the battle must be joined.

The Federal Demonstration Project will be evaluated not only on its contribution to research productivity, but also on its maintenance of standards of accountability and its efficiency in handling the administrative aspects of Federal research funding.

The task group on Productivity/Assessment met on a number of occasions to lay the ground rules, to review models for measuring productivity, and to construct data collection instruments. At this date two aspects of assessment are in place: (1) all PIs with both current FDP awards and prior awards from FDP agencies were surveyed, with all but two institutions reporting, and (2) all PIs who submit non-competing continuation applications are being asked to fill out a questionnaire. An additional survey to solicit data on the impact of the changes in documentation standards as they pertain to "relatedness", as well as other areas of interest to the Research Roundtable, the Federal agencies, the Office of Management and Budget, and the universities and colleges represented in the FDP is under consideration. This report deals only with the results of the survey item # 1.

METHODOLOGY

The ground rules under which the Productivity/Assessment task group operated were: (1) that they were to look at research productivity, not cost savings, (2) that they would evaluate both direct and indirect means to measure productivity, and (3) that they would seek faculty input and support for the methodology to be used. It was recognized that it is an especially difficult task to measure the result of changes in administrative procedures when the impact is likely to be marginal and to differ with each PI. As noted in the Foreward, professional advice was sought and utilized throughout the project. It was also agreed that this study would relate only to savings to the researchers, not to administrative assistants, secretaries, and other support staff. However important this additional savings is, it could not be directly converted to more research time available as is the case with PI time saved.

Productivity versus Cost Savings

Once Congress settles on an overall level of Federal research support, it is the agencies and divisions within each agency which attempt to structure their research and development programs to obtain the most benefit (hopefully, long-term) for the dollar. At a given level of research support, the improvements to the system can be quantified by measuring the production of more, better, or timelier research.

Direct and Indirect Measures

More research could in part be identified with more scientific presentations, more intellectual property disclosures, more manuscripts published, etc. One objection to this approach is that it does not deal with the issue of quality but only quantity. Measures such as patents awarded, Nobel recognition, and use of the citation index may touch on the quality of research, but they have a major drawback in that there are many years which go by between the implementation of a change in the procedures and the point when that change could have an impact on any of the quality measures. Furthermore, using either the quantity or quality measures and comparing them with and without the FDP provisions, it is important to control for all of the outside variables which might have an impact on the outcome. Establishing a control group in a non-laboratory setting would have been a difficult task at best, but that option was not even available because of OMB's issuance of the expanded authorities to all colleges and universities. Collecting faculty profiles or curriculum vitae pre-FDP and during FDP and comparing the two time periods was considered as an alternative, but the lack of a controlled environment would cause one to question the interpretation of any results. A similar weakness existed in attempting to compare the timeliness of final report submissions pre-FDP and during FDP.

Faculty Advice and Support

Faculty members given the opportunity to comment on alternate methodologies proposed by the Productivity/Assessment task group cautioned against trying to make the project too scientific. Given the setting, measurements were not likely to be reproducible, using historical controls were unreliable and the noise generated in the system would require an inordinate sample size for validating what were expected to be rather modest changes in measures due to the "expanded authorities" introduced by OMB. One faculty member from the Dartmouth Medical School captured the feelings of many other PIs in stating that "a more honest approach would be to make the simplifying assumption that productivity is directly proportional to time available for research."

After much discussion, the task group eventually adopted this methodology of measuring the time saved by PIs due to the expanded authorities as the first step in the assessment project. It further tested the above assumption that saved time would

be reinvested in research. This report summarizes the results (including all but two of the participating institutions) of this time saved/time invested model.

RESULTS

The accompanying table summarizes the data collected from the institutions participating in the first phase of the FDP assessment study. Graphic presentations follow the summary table with detailed institutional data provided in the appendix at the end of the report (following the anecdotal material).

The first section of the Summary on Page 4 indicates that of the 2,622 PIs impacted by the "expanded authorities" provisions of the FDP, their average time spent during the year prior to the beginning of the FDP on all of the provisions taken together was 6.90 days. The second section indicates that the average time spent on those same provisions taken together was 1.67 days during the first year of the FDP. The third section displays the savings of time per each "expanded authority" for an average annual savings of 5.23 days per PI taking all PIs who reported that they spent any time on one or more of the four provisions. For those PIs who spent time on "prior approvals" the average savings was 2.31 days annually. Similarly, the average savings for "pre-award costs", "no-cost extensions", and "carryover of funds" were 1.86, 1.13, and 2.53 days per PI affected. What is singularly impressive about the results is the uniformity of responses. Whether the institution is large or small, public or private, highly research oriented or more general in approach, the FDP is acclaimed by the PIs as beneficial to research productivity.

Overall, 2,501 PIs reported time saved under the FDP project. The fourth section shows that 13,722 days were saved, with 12,222 (or 89%) of those days reinvested in scholarly activities and with 10,011 (or 73%) of those days reinvested in research. To provide another perspective on these "time reinvestments", it can be said that the study documents a total of 47 person-years of additional scholarly activities, of which 38.5 person-years was in research activity from those PIs participating in the survey. Furthermore, applying the rates of return for each institution (see Table 5 of the appendix), it is possible to project that the overall additional investment in research activity made possible by the FDP was roughly 79 person-years of research. Further applying these results to the non-FDP participants who benefitted from the OMB expanded authorities, provides annually an additional 158 person-years of research.

Note: of the 2,622 PIs reporting having spent time on one or more of the "expanded authorities" provisions, 2,501 saved time (the other 121 PIs reported no time savings). Since the last section of the summary table (the Professional Activity Profile) is an accumulation of the reports of the activities of only those PIs who saved time, their average reinvestment of 5.49 days per PI is greater than the average time saved by all PIs (5.23 days per PI) who were impacted by one or more of the "expanded authorities" provisions because 121 members of this group did not realize savings.

SUMMARY TABLE

NOVEMBER 27,1990

TIME SPENT ON "EXPANDED AUTHORITIES" PROVISIONS PRE FDP

	PRIOR APPROVALS		PRE-AWARD COSTS		NO-COST EXTENSION		CARRYOVER OF FUNDS		TOTAL TIME	
	NO OF PIS	MEAN # OF DAYS	NO OF PIS	MEAN # OF DAYS	NO OF PIS	MEAN # OF DAYS	NO OF PIS	MEAN # OF DAYS	NO OF PIS	MEAN # OF DAYS
OVERALL RESULTS	2388	3.12	1029	2.60	1430	1.54	1865	3.12	2622	6.90

TIME SPENT ON "EXPANDED AUTHORITIES" PROVISIONS DURING FDP

	PRIOR APPROVALS		PRE-AWARD COSTS		NO-COST EXTENSION		CARRYOVER OF FUNDS		TOTAL TIME	
	NO OF PIS	MEAN # OF DAYS	NO OF PIS	MEAN # OF DAYS	NO OF PIS	MEAN # OF DAYS	NO OF PIS	MEAN # OF DAYS	NO OF PIS	MEAN # OF DAYS
OVERALL RESULTS	2388	0.81	1029	0.74	1430	0.41	1865	0.59	2622	1.67

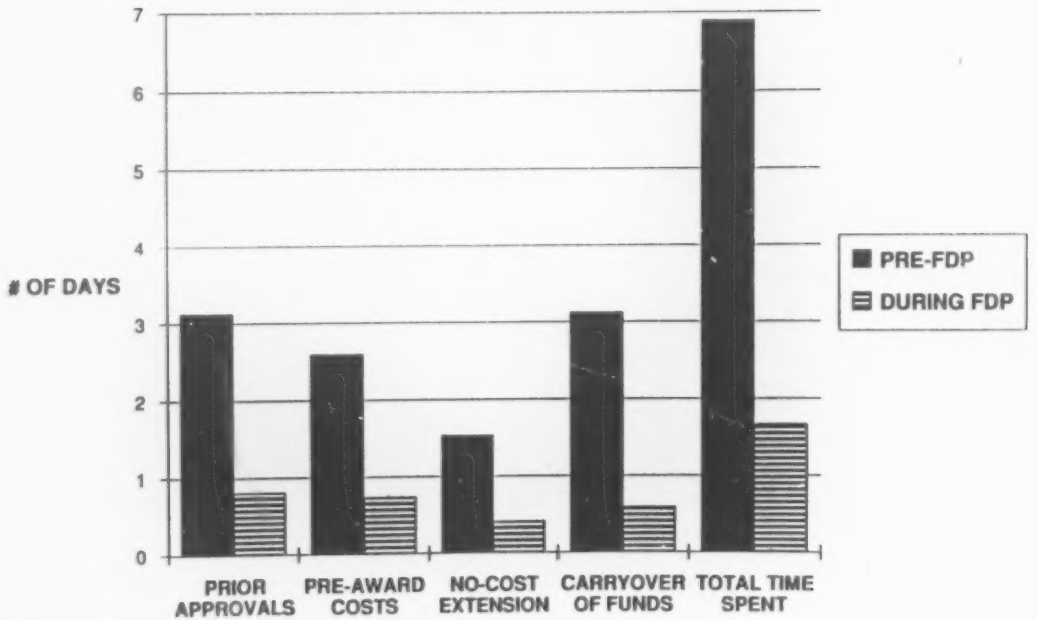
TOTAL TIME SAVED

	PRIOR APPROVALS	PRE-AWARD COSTS	NO-COST EXTENSION	CARRYOVER OF FUNDS	COMBINED MEAN SAVINGS PER PI IN DAYS	NO OF PIs
MEAN SAVINGS PER PI IN DAYS	2.31	1.86	1.13	2.53	5.23	2622

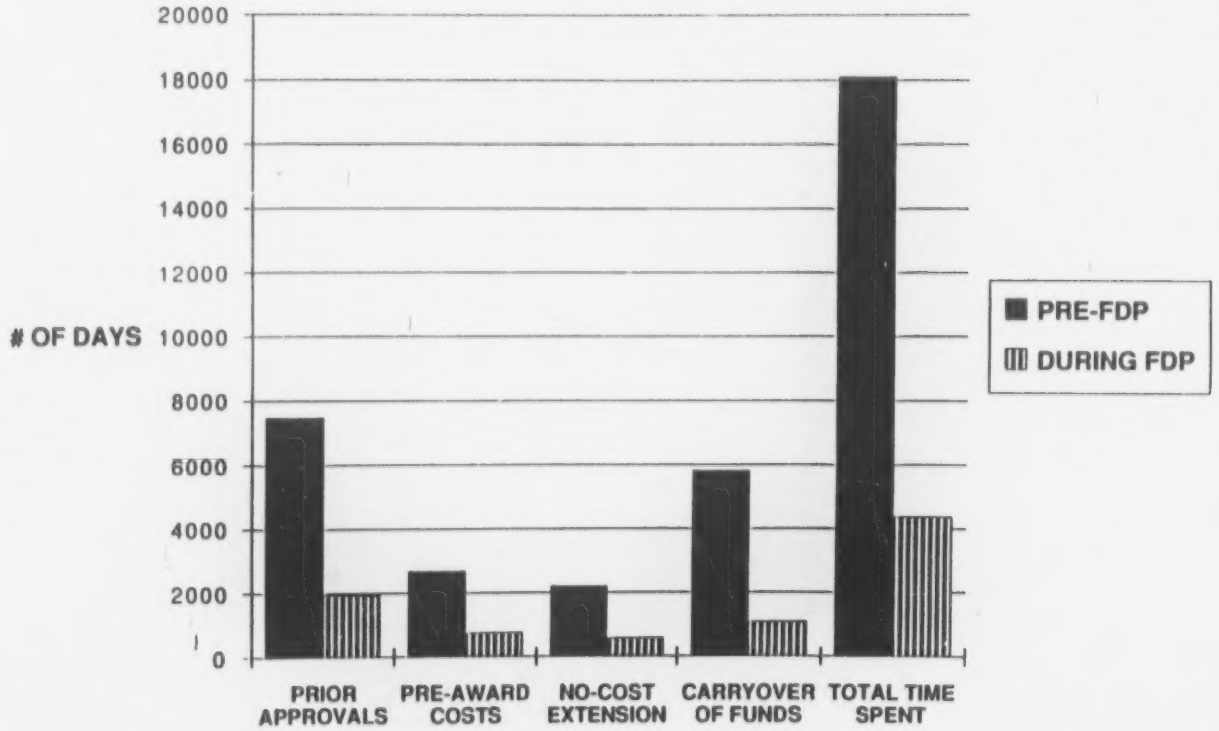
PROFESSIONAL ACTIVITY PROFILE - TIME REINVESTED

	RES/SCHOLAR		RES ADMIN		TEACH/STDT		CLINICAL/PATNT		UNIV ADMIN		EXTRAMURAL		OTHER ACTIV		COMBINED TOTAL ALL ACTIVITIES	
	TOTAL DAYS	DAYS PER PI	TOTAL DAYS	DAYS PER PI	TOTAL DAYS	DAYS PER PI	TOTAL DAYS	DAYS PER PI	TOTAL DAYS	DAYS PER PI	TOTAL DAYS	DAYS PER PI	TOTAL DAYS	DAYS PER PI	TOTAL DAYS	DAYS PER PI
TOTAL DAYS ALL INSTITUTIONS	10011.20	4.00	871.22	0.35	1360.76	0.54	168.58	0.07	438.60	0.18	681.85	0.27	189.94	0.08	13722.21	5.49
															NO OF PIs	2501

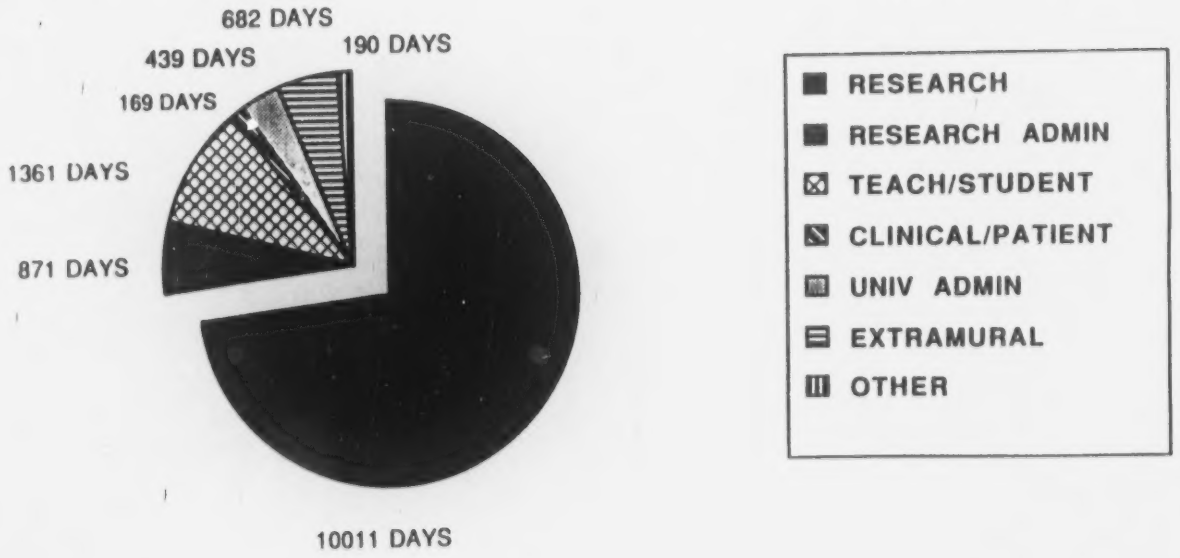
AVERAGE TIME SPENT PER PI



TOTAL PI TIME SPENT PER CATEGORY



PROFESSIONAL ACTIVITY PROFILE - HOW TIME SAVED WAS REINVESTED



SUMMARY OF ANECDOTAL MATERIAL

The participating institutions had some flexibility in terms of the way the questionnaires were administered. For example, some institutions mailed copies of the questionnaires, some handed the questionnaires to faculty in small group meetings, and some institutions used a combination of approaches. Johns Hopkins University was unique in that they specifically asked all of the PIs to comment apart from filling out the questionnaires. Over half of the Johns Hopkins participants (89 out of 168) took the time to express their views about the FDP. Other institutions taking part in the survey received many unsolicited comments. The task force intends to survey all faculty PIs using a more open-ended evaluation instrument to be administered at some later date. At that time PIs will be asked for even more detailed examples of how the FDP impacted their research.

The accompanying table provides information categorizing the types of comments or concerns expressed by the PIs. Whether the comments were solicited or not, there was a great sense of appreciation for the opportunities provided by the FDP.

One of the biggest concerns expressed in the anecdotal material was that the questionnaire only touched on one part of the research picture (namely, the PI's time) and the faculty were concerned that their responses understated the impact on their research. It is clear that there is broad, overwhelming support of the objectives of the FDP. The faculty would like the project to move ahead with further experiments.

Another specific concern of a number of PIs was the fact that overall administration of grants and contracts, as far as they were concerned, has actually increased. Even though the provisions of the "expanded authorities" have saved them time, they have had to reinvest all of that saved time in dealing with the new animal welfare regulations or other recently introduced requirements. Though all of us in administrative offices at colleges and universities have been sensitive to the long list of certifications and representations and the administrative structure they make necessary at our institutions, we were surprised that some faculty have had their research time eaten into despite the profound accomplishments of the FDP. Nonetheless, even these over-burdened faculty have applauded the overall attitude of university and agency cooperation in striving to improve the research environment.

TABLE OF ANECDOTAL RESPONSES

Category	Johns Hopkins University (Solicited)	All Others (Unsolicited)
#1 More efficient use of funds, flexibility, quick approvals, and new opportunities	Forty-eight	Forty-seven
#2 Survey understates impact of FDP	Six	Ten
#3 PI saved time, but had other problems with program officer who did not know about FDP or had new requirements use up all the time saved	Three	Nine
#4 Even when savings were small, the time saved took the place of STRESSFUL time	Two	Eight
#5 Questioned quantitative nature of questionnaire	One	Five
#6 Expressions of general support - expand to more agencies, to more NIH programs, to center grants	Twenty-nine	Forty-one

Category #1 Efficiency, flexibility, quick approvals, and new opportunities

Of the FDP initiatives, the most important to me is the "carry over of funds," followed by the "No-Cost Extension." Although the saving of time by the FDP approach is definitely worthwhile, the major benefit to me is the ability to plan my research activities for three years in the future without the worry and hassle of losing a chunk of funds because a post-doctoral fellow may have shown up 6 months too late and because the granting agency might feel that it is short of funds that particular year. When I write a detailed 3-year grant proposal it is with the understanding that the research can be largely accomplished in 3 years and that if the grant is funded, I will not need to further worry about funding, but can focus instead on the research program. The granting agencies do pursue the former idea - that proposed research be completed- but they do not recognize the latter corollary, that in order to achieve the first goal, some financial security for a 3-year period is required. The FDP automatic carry-over of funds is the greatest funding advance I have experienced in my 30 year career in science. This approach eliminates red tape from both the agency investigator operations. Please do not eliminate it!

Johns Hopkins - Chemistry PI

The major advantage of the FDP for faculty research supported by individual RO1 type grants is the flexibility in hiring research associates. To be precise, if recruitment is delayed one year because of a lack of suitable candidates, then the leftover money can be used to support two individuals instead of one in the second year. This is a tremendous boost to the recruitment of good associates when they happen to show up. The result is increased productivity and quality of research and far better use of the available funds. Another non-negligible advantage is the flexibility in equipment purchases which also adds to the quality of the research by allowing faster access to new technology.

University of Virginia - Pharmacology PI

The carry-over provision is a huge money-saver because it has made possible more timely purchases (coinciding with sales and promotions by the companies). The greater discretion in spending together with the carry-over provision has permitted us to acquire new technologies developed during the overall life of our grant which we could not have anticipated upon initial application for funds. We have two key pieces of equipment (a PCR machine and a DNA synthesizer) that have revolutionized our lab, enormously increasing productivity. Both were items not originally budgeted and which became affordable because we had carried over unspent funds from the previous year.

Johns Hopkins - Biology PI

I believe there is a less quantifiable but equally important advantage of the FDP over prior arrangements. The prospect of having to undergo extensive written justification to shift funds across categories, or to carry funds forward to the next fiscal year,

means that these activities may be avoided, even if funds are used less efficiently as a result. In addition, there may be a more subtle chilling effect of prior arrangements. I had the feeling that if such extensive written justification was necessary, then perhaps the granting agency did not approve of activity such as shifting funds from one category to another, or carrying surplus funds forward to the next year. The FDP makes it clear that this is not the case, and that the granting agency recognizes the existence of changing circumstances from year to year. this encourages investigators to spend funds most efficiently, rather than to force outlays into a mold that may have been cast several years previously.

University of California - Campus and Department unspecified

As you may expect, it is rather difficult to estimate the amount of time saved. What is of major important is the time saved between the realization that a budget change is necessary and the time when that change is approved. For example, during the pre-FDP period of my grant, the departmental rock saw broke down and was judged not repairable. In order to purchase a new machine I secured University matching funds within a few days, but then had to wait roughly one month more to receive approval for the budget change. What that meant to me was an additional one month of "down time" during which no rock samples could be processed. In contrast, last year I began analyzing rock samples for percent of clasts versus cements by area. My initial plan was to photograph rock thin-sections, and then collect the data by digitizing the photographs. This required a student to act as a dark room technician. It rapidly became clear that finding both a student who could do a good job developing photos and one who would be reliable was not possible. At that point I investigated low-cost Image Analysis Systems which could be run through my computer. When I found an appropriate system, I rapidly received approval from the University for matching funds, and then shifted funds from the student payroll budget line to equipment - and purchased the system. I was basically saved a month of "down time" waiting for approval of the budget switch. That month was used in research.

State University of New York - Department unspecified

This questionnaire missed the major time savings I have enjoyed from the FDP. This is avoiding the delays associated with waiting for approval of requests from agencies. This amounts to hundreds of hours in experiment time that would otherwise be lost.

Northwestern University - Department unspecified

The FDP has greatly facilitated our research aims and improved our capability to make decisions based on scientific issues rather than bending them to fit external requirements. This flexibility has resulted in more time for research, considerably less paperwork, and smoother (and less frequent) interactions with university and federal administrators. My hunch is that the more flexible system, which in a way puts the major responsibility back into the hands of the principal investigator, has

led to a considerable saving in time, money, and manpower, and I hope less abuse of the research grant system.

University of California-Los Angeles - Neuropsychiatry PI

There were 88 similar comments in Category #1 by other PIs.

Category #2 Survey understates impact of FDP

I also saved intangibles - i.e, I was able to get a critical piece of equipment in time for a cruise that I otherwise could not have gotten in time. This increased the success of the cruise by about 50 %!!

University of California-Santa Barbara - Marine Sciences

This time allocation greatly underestimates the benefits of the FDP. It has greatly facilitated planning (i.e. because it was clear a later decision could be rapidly implemented) and thus has conserved resources.

University of Southern California - Preventative Medicine

It seems to be that the number of days saved does not capture the benefit of the FDP changes. It has as much to do with what the PI sees as POSSIBILITIES. It never occurred to me to try to take advantage of a special conference on my research area. If I did not know about it two years in advance, I did not go because it was not in the budget. So people did not hear about what we were doing and collaborations with other labs were not so readily arranged. Getting a new technology working requires pilot work, adjustments in design, and the redefinition of what is needed. The flexibility in the FDP regulations makes this go more smoothly. New data makes one rethink the next steps of the research and sometimes new procedures (involving unexpected expenses) are required. Progress is much facilitated by the FDP. New procedures from other labs working on similar problems can be more easily implemented. in other words, we have moved from a bureaucratic bog-down to the more flexible, responsive framework that really helps research progress.

University of California - Campus and Department unspecified

There were 13 similar comments in Category #2 by other PIs.

Category #3 PI saved time but had other off-setting time commitments

At the end of 1989 I requested permission to extend this grant one more year without additional cost to the agency. The university approved this under FDP, but the agency was not alerted or aware of the FDP privileges, and they demanded a final report in January 1990 along with a final financial breakdown of the grant expenditures. It took several letters between the university, the agency and myself before this no-cost extension was straightened out.

Johns Hopkins - DOGEE PI

Time costs of old procedures were not great in 1988 by accident. Substantially greater time costs have been incurred in other pre-FDP years. Most of the time saved has been lost to increased paperwork for animals and "hazardous" chemicals.
Johns Hopkins - Radiology PI

There were 10 similar comments in Category #3 by other PIs.

Category #4 Even when time saved was small, it replaced STRESSFUL time

I would like to comment on one aspect that is not requested in this form. I believe the FDP has been a very helpful change and hope it will continue. It was particularly beneficial in relieving the stress involved with having to worry about the spending of money within a given time frame. Instead of the constant worry and concern about the budget, I was able to place all of my energy and effort into scientific projects. I found it extremely helpful in a psychological way in addition to saving actual work hours.
University of California-San Francisco - Pathology PI

There were 9 similar comments in Category #4 by other PIs.

Category #5 Questioned quantitative nature of questionnaire

Clearly, the improvements put in place by the FDP are extremely useful. Equally clearly (at least to me) is that it is extraordinarily difficult to assess its value in the quantitative terms required in the enclosed questionnaire. In these times of great difficulty (and thus of high stress) to get one's projects funded, these FDP provisions are just one small form of reducing the difficulty and stress, and giving us more time to do and think about our research and teaching. However, equally clearly, I recognize the need for accountability to the federal government, but until I can be shown that there have been abuses created by the FDP provisions, I feel strongly that they should (and must) be retained as permanent policy.
Johns Hopkins - Earth and Planetary Sciences PI

There were 5 similar comments in Category #5 by other PIs.

Category #6 Expressions of general support - expansion of the FDP

As an involved principal investigator, I find it difficult to quantify a time cost efficiency improvement factor resulting from the FDP. The system has been working so smoothly it is almost automatic, as of course it should be. Like a well-tuned car, it gets us to our destination without being conscious of our dependence on the vehicle

for transportation. It certainly is a step in the right direction, and should be maintained.

University of Michigan - Unspecified department

This is a most worthwhile and valuable endeavor. Simplifying administrative requirements translates directly into more research time and better productivity. It would be very costly to U.S. research if the FDP were terminated or trimmed down. It should be expanded.

Johns Hopkins - Environmental Health Sciences PI

Putting aside the form, I wanted to express my appreciation for the benefits of this program. I have been a principal investigator of federal grants for about 25 years and I have seen the gradual increase of rules and regulations which have time and time again greatly and unnecessarily complicated my duties and responsibilities as a scientist. The various restrictions and requirements have taken up a lot of our time and effort. They resulted in frequent and long conversations on the telephone with people in grants and accounting offices both here and with administrators and scientific officers in Washington. Time and energy was spent discussing fine points of the rules or in writing memos and justifications. Sometimes, we ended up in disputes, as if investigator and administrator were in an adversarial rather than a cooperative relationship.

University of California-Los Angeles - Neuropsychiatry PI

There were 67 similar comments in Category #6 by other PIs.

APPENDICES

BASIC DATA COLLECTION
SUMMARY OF INSTITUTIONAL RESPONSES

TABLE 1 PRE FDP

	PRIOR APPROVALS		PRE-AWARD COSTS		NO-COST EXTENSION		CARRYOVER OF FUNDS		TOTAL TIME	
	# OF PIs	MEAN # OF DAYS	# OF PIs	MEAN # OF DAYS	# OF PIs	MEAN # OF DAYS	# OF PIs	MEAN # OF DAYS	# OF PIs	MEAN # OF DAYS
CALIFORNIA INSTIT OF TECHNOLOGY										
CASE WESTERN RESERVE UNIV	59	3.21	22	7.50	36	0.79	54	6.15	67	10.27
COLUMBIA UNIV	108	3.74	40	2.98	64	2.20	84	3.80	121	8.12
CORNELL UNIV	109	2.54	37	2.73	67	1.68	76	2.51	120	5.65
DARTMOUTH COLLEGE	35	2.50	15	2.28	26	1.05	34	2.92	40	6.2
EMORY UNIVERSITY	61	2.90	22	2.12	34	1.55	51	4.42	69	7.28
JOHNS HOPKINS UNIVERSITY	121	3.08	54	2.23	65	1.98	107	3.62	134	7.34
NORTHWESTERN UNIV	89	2.58	43	1.92	56	1.31	64	2.61	95	5.81
OHIO STATE UNIV	34	2.85	7	2.43	24	1.84	27	6.57	43	7.80
RICE UNIVERSITY	46	2.43	19	1.98	37	1.45	31	2.37	55	5.00
SRI, INTERNATIONAL	19	1.96	11	1.57	10	0.73	11	1.73	22	3.67
STATE UNIV OF NEW YORK (SUNY)	268	3.00	115	2.28	159	1.61	210	2.67	303	6.20
TEXAS A&M UNIV	68	4.38	31	5.44	46	1.53	51	3.21	69	10.20
UNIV OF CALIFORNIA										
BERKELEY	108	3.85	50	2.40	64	1.36	75	2.93	112	7.52
IRVINE	45	2.50	24	1.89	24	1.08	35	2.39	50	5.35
LOS ANGELES	244	3.10	104	2.35	134	1.47	176	2.51	259	6.33
RIVERSIDE	29	2.57	12	1.58	21	1.45	26	1.86	33	5.23
SAN DIEGO	83	2.58	47	2.22	62	1.43	64	2.91	92	6.45
SAN FRANCISCO	140	3.13	36	2.79	70	1.53	117	3.09	146	6.90
SANTA BARBARA	23	2.86	12	2.50	13	1.12	13	2.00	24	5.58
SANTA CRUZ	31	2.04	18	1.19	14	0.75	14	1.01	31	3.53
UNIV OF CHICAGO	68	3.96	31	3.89	40	2.51	50	5.18	79	9.31
UNIV OF CINCINNATI	25	3.41	15	1.20	19	1.47	18	2.72	25	7.21
UNIV OF HAWAII	67	4.99	41	2.78	61	2.46	42	3.84	73	10.29
UNIV OF HOUSTON	41	3.10	21	1.90	28	1.60	25	3.24	43	6.81
UNIV OF LOWELL	4	2.75	3	3.00	2	1.00	6	2.50	6	6.17
UNIV OF MICHIGAN	134	2.23	47	2.23	75	0.93	112	2.64	154	4.99
UNIV OF SOUTHERN CALIFORNIA	132	3.21	62	2.75	60	1.46	104	2.88	140	7.01
UNIV OF TEXAS										
DALLAS	11	5.41	10	3.75	12	2.29	12	4.00	15	11.50
HSC, SAN ANTONIO	69	3.36	32	2.22	44	1.51	67	3.07	75	7.67
SW MED CENTER	60	2.63	17	2.91	31	1.19	60	2.64	66	6.11
UNIV OF VIRGINIA	57	3.96	31	2.86	30	2.01	49	3.29	61	8.58
UNIV OF WISCONSIN										
OVERALL RESULTS	2388	3.12	1029	2.60	1330	1.54	1865	3.12	2622	6.90

BASIC DATA COLLECTION
SUMMARY OF INSTITUTIONAL RESPONSES

TABLE 2 DURING FDP

	PRIOR APPROVALS		PRE-AWARD COSTS		NO-COST EXTENSION		CARRYOVER OF FUNDS		TOTAL TIME	
	# OF Pls	MEAN # OF DAYS	# OF Pls	MEAN # OF DAYS	# OF Pls	MEAN # OF DAYS	# OF Pls	MEAN # OF DAYS	# OF Pls	MEAN # OF DAYS
CALIFORNIA INSTIT OF TECHNOLOGY										
CASE WESTERN RESERVE UNIV	59	3.20	22	1.22	36	0.50	54	3.64	67	6.38
COLUMBIA UNIV	108	0.84	40	0.82	64	1.27	84	0.64	121	2.14
CORNELL UNIV	109	0.30	37	0.38	67	0.17	76	0.22	120	0.62
DARTMOUTH COLLEGE	35	0.37	15	0.30	26	0.11	34	0.23	40	0.71
EMORY UNIVERSITY	61	0.52	22	0.60	34	0.29	51	0.59	69	1.23
JOHNS HOPKINS UNIVERSITY	121	0.73	54	0.41	65	0.28	107	0.53	134	1.38
NORTHWESTERN UNIV	89	0.65	43	0.56	56	0.48	84	0.67	95	1.60
OHIO STATE UNIV	34	0.57	7	0.14	24	0.39	27	2.22	43	2.09
RICE UNIVERSITY	46	0.92	18	0.36	37	0.38	31	0.36	55	1.35
SRI, INTERNATIONAL	19	0.74	11	0.37	10	0.22	11	0.10	22	0.97
STATE UNIV OF NEW YORK (SUNY)	268	0.68	115	0.63	159	0.38	210	0.32	303	1.26
TEXAS A&M UNIV	68	0.86	31	2.13	48	0.41	51	0.68	69	2.60
UNIV OF CALIFORNIA										
BERKELEY	108	1.03	50	0.79	64	0.33	75	0.50	112	1.87
IRVINE	45	0.59	24	0.34	24	0.20	35	0.22	50	0.95
LOS ANGELES	244	0.77	104	0.63	134	0.38	176	0.42	259	1.45
RIVERSIDE	29	0.68	12	0.27	21	0.19	26	0.34	33	1.09
SAN DIEGO	83	0.78	47	0.72	62	0.35	64	0.36	92	1.56
SAN FRANCISCO	140	0.72	36	0.43	70	0.29	117	0.49	146	1.33
SANTA BARBARA	23	0.64	12	0.84	13	0.41	13	0.60	24	1.63
SANTA CRUZ	31	0.34	18	0.25	14	0.15	14	0.11	31	0.61
UNIV OF CHICAGO	68	0.86	31	1.49	40	0.89	50	1.17	79	2.35
UNIV OF CINCINNATI	25	0.70	15	0.[illegible]	19	0.36	18	0.37	25	1.71
UNIV OF HAWAII	67	2.37	41	1.74	61	0.85	42	1.23	73	4.56
UNIV OF HOUSTON	41	0.83	21	0.74	28	0.51	25	0.74	43	1.86
UNIV OF LOWELL	4	0.88	3	2.50	2	0.13	6	0.96	6	2.63
UNIV OF MICHIGAN	134	0.48	47	1.03	75	0.25	112	0.42	154	1.16
UNIV OF SOUTHERN CALIFORNIA	132	0.69	62	0.42	80	0.23	104	0.30	140	1.15
UNIV OF TEXAS										
DALLAS	11	0.84	10	1.10	12	0.42	12	0.54	15	2.12
HSC, SAN ANTONIO	69	0.71	32	0.38	44	0.30	67	0.34	75	1.30
SW MED CENTER	60	0.80	17	0.90	31	0.38	60	0.33	66	1.44
UNIV OF VIRGINIA	57	0.99	31	0.90	30	0.49	49	0.57	61	2.27
UNIV OF WISCONSIN										
OVERALL RESULTS	2388	0.81	1029	0.74	1430	0.41	1885	0.59	2622	[illegible]

BASIC DATA COLLECTION
SUMMARY OF INSTITUTIONAL RESPONSES

TABLE 3 TOTAL TIME SAVED SUMMARY

	PRIOR APPROVALS	PRE-AWARD COSTS	NO-COST EXTEN' ON	CARRYOVER OF FUNDS	TOTAL TIME
CALIFORNIA INSTIT OF TECHNOLOGY	0.00	0.00	0.00	0.00	0.00
CASE WESTERN RESERVE UNIV	0.01	6.28	0.29	2.51	3.88
COLUMBIA UNIV	2.90	2.16	0.93	3.16	5.98
CORNELL UNIV	2.24	2.34	1.51	2.29	5.03
DARTMOUTH COLLEGE	2.13	1.98	0.94	2.69	5.49
EMORY UNIVERSITY	2.38	1.52	1.26	3.83	6.05
JOHNS HOPKINS UNIVERSITY	2.25	1.82	1.31	3.09	5.96
NORTHWESTERN UNIV	1.93	1.34	0.83	1.94	4.21
OHIO STATE UNIV	2.28	2.29	1.46	4.35	5.71
RICE UNIVERSITY	1.51	1.62	1.07	2.01	3.65
SRI, INTERNATIONAL	1.22	1.20	0.51	1.63	2.70
STATE UNIV OF NEW YORK (SUNY)	2.32	1.65	1.23	2.35	4.34
TEXAS A&M UNIV	3.52	3.31	1.12	2.52	7.60
UNIV OF CALIFORNIA					
BERKELEY	2.82	1.61	1.03	2.43	5.65
IRVINE	1.91	1.55	0.86	2.17	4.40
LOS ANGELES	2.33	1.72	1.09	2.09	4.66
RIVERSIDE	1.88	1.31	1.26	1.52	4.14
SAN DIEGO	1.80	1.50	1.08	2.55	4.89
SAN FRANCISCO	2.41	2.36	1.24	2.60	5.57
SANTA BARBARA	2.22	1.36	0.71	1.40	3.85
SANTA CRUZ	1.70	0.94	0.88	0.90	2.92
UNIV OF CHICAGO	3.10	2.40	1.62	4.01	6.96
UNIV OF CINCINNATI	2.71	0.43	1.11	2.35	5.50
UNIV OF HAWAII	2.62	1.04	1.61	2.41	5.73
UNIV OF HOUSTON	2.27	1.16	1.08	2.50	4.95
UNIV OF LOWELL	1.87	0.50	0.87	1.54	3.34
UNIV OF MICHIGAN	1.75	1.20	0.66	2.22	3.83
UNIV OF SOUTHERN CALIFORNIA	2.52	2.33	1.23	2.58	5.86
UNIV OF TEXAS					
DALLAS	4.57	2.65	1.87	3.46	9.38
HSC, SAN ANTONIO	2.65	1.83	1.21	2.73	6.37
SW MED CENTER	1.83	2.01	0.81	2.31	4.67
UNIV OF VIRGINIA	2.97	1.96	1.52	2.72	6.51
UNIV OF WISCONSIN	0.00	0.00	0.00	0.00	0.00
MEAN SAVINGS	2.30	1.86	1.13	2.54	5.23

SUMMARY OF INSTITUTIONAL RESPONSES TABLE 4 PROFESSIONAL ACTIVITY PROFILE

	RES/SCHOLARLY ACTIVITIES		RESEARCH ADMINISTRATION		TEACHING/STUDENT CTRD ACTIVITIES		CLINICAL/PATIENT CTRD ACTIVITIES		UNIVERSITY ADMINISTRATION		EXTRAMURAL ACTIVITIES		OTHER ACTIVITIES		SCHEMED TOTAL ALL ACTIVITIES	
	TOTAL DAYS SPENT	DAYS PER PI	TOTAL DAYS SPENT	DAYS PER PI	TOTAL DAYS SPENT	DAYS PER PI	TOTAL DAYS SPENT	DAYS PER PI	TOTAL DAYS SPENT	DAYS PER PI	TOTAL DAYS SPENT	DAYS PER PI	TOTAL DAYS SPENT	DAYS PER PI	OVERALL DAYS SPENT	OVERALL DAYS PER PI
CALIFORNIA INSTIT OF TECHNOLOGY																
CASE WESTERN RESERVE UNIV	190.68	3.41	20.80	0.37	23.84	0.42	10.16	0.18	6.83	0.10	14.68	0.26	1.80	0.03	0.00 271.37	0.00 4.83
COLUMBIA UNIV	279.00	5.17	33.39	0.30	60.00	0.84	3.35	0.03	15.35	0.14	36.07	0.26	7.84	0.07	731.48	6.53
CORNELL UNIV	370.54	3.28	20.91	0.18	66.79	0.61	0.00	0.00	17.00	0.16	26.86	0.24	7.34	0.07	512.85	4.53
DARTMOUTH	180.43	4.34	0.00	0.24	14.10	0.38	6.02	0.18	4.13	0.11	6.60	5.24	3.20	0.09	208.20	5.57
EMORY UNIV	308.67	4.63	49.49	0.02	20.01	0.33	6.73	0.11	11.30	0.19	20.97	0.34	7.75	0.13	417.50	6.84
JOHNS HOPKINS	552.00	4.67	45.00	0.34	44.00	0.33	11.00	0.09	17.00	0.13	25.00	0.19	2.00	0.01	797.00	5.99
NORTHWESTERN	278.79	2.93	35.97	0.38	39.00	0.42	2.00	0.02	18.63	0.20	19.19	0.20	3.84	0.04	396.39	4.16
OHIO STATE UNIV	189.85	4.42	11.17	0.26	16.07	0.38	2.10	0.05	12.11	0.28	19.48	0.24	4.25	0.09	248.63	5.74
RICE UNIV	159.47	3.16	7.56	0.15	22.60	0.45	0.40	0.01	4.71	0.09	6.30	0.12	4.25	0.09	205.31	4.11
SRI INTERNATIONAL	51.53	2.43	2.30	0.11	1.17	0.06	0.00	0.00	0.22	0.01	3.61	0.18	0.40	0.02	59.43	2.83
STATE UNIV OF NEW YORK (SUNY)	1100.29	2.02	80.80	0.20	166.22	0.67	11.63	0.04	99.18	0.21	57.65	0.21	13.37	0.05	1311.82	5.36
TEXAS A&M	364.46	5.26	23.58	0.34	61.81	0.90	0.05	0.00	22.61	0.33	35.22	0.51	16.50	0.24	524.38	7.60
UNIV OF CALIFORNIA BERKELEY	455.31	4.38	21.38	0.20	105.80	1.01	0.00	0.00	19.00	0.18	32.54	0.31	2.68	0.03	639.69	6.03
IRVINE	155.26	3.36	7.37	0.16	10.05	0.43	2.30	0.05	5.00	0.12	14.42	0.31	16.73	0.36	221.56	4.93
LOS ANGELES	609.65	3.79	60.20	0.25	150.05	0.66	15.07	0.07	37.22	0.15	63.86	0.26	15.13	0.06	1272.06	5.24
RIVERSIDE	66.36	2.85	0.15	0.27	10.05	0.66	0.00	0.00	0.07	0.26	0.87	0.39	4.36	0.15	138.06	4.56
SAN DIEGO	266.12	3.44	40.70	0.47	37.45	0.44	10.09	0.12	14.56	0.17	33.27	0.39	20.10	0.33	448.90	5.83
SAN FRANCISCO	562.09	3.80	107.51	0.75	45.57	0.32	21.46	0.15	19.05	0.14	45.64	0.32	10.68	0.07	812.72	5.64
SANTA BARBARA	74.62	3.13	1.52	0.06	0.91	0.37	0.00	0.00	1.24	0.05	0.37	0.34	0.00	0.00	84.76	3.66
SANTA CRUZ	79.66	2.84	2.50	0.09	5.00	0.17	0.00	0.00	3.27	0.11	2.84	0.10	0.00	0.00	94.53	3.13
UNIV OF CHICAGO	437.71	8.54	27.79	0.35	24.40	0.31	13.40	0.17	7.21	0.09	19.05	0.25	0.58	0.01	531.05	6.72
UNIV OF CINCINNATI	71.44	2.90	17.23	0.72	35.70	1.46	0.30	0.02	5.45	0.23	6.60	0.29	0.64	0.03	137.65	5.74
UNIV OF HAWAII	209.83	5.24	24.58	0.39	63.56	1.01	3.80	0.06	15.79	0.25	21.33	0.34	0.65	0.01	498.06	7.36
UNIV OF HOUSTON	140.27	3.42	17.27	0.43	23.61	0.58	5.47	0.13	6.21	0.15	10.20	0.40	3.45	0.08	211.88	5.17
UNIV OF LOWELL	15.25	2.54	2.33	0.39	0.63	0.10	0.70	0.12	0.13	0.02	0.05	0.18	0.00	0.20	20.00	3.33
UNIV OF MICHIGAN	481.11	3.14	38.18	0.25	37.96	0.26	16.05	0.11	17.23	0.12	24.47	0.17	12.35	0.08	605.35	4.13
UNIV OF SOUTHERN CALIFORNIA	609.70	4.33	50.30	0.36	66.00	0.63	0.40	0.00	25.00	0.18	35.30	0.23	9.30	0.07	919.00	5.86
UNIV OF TEXAS DALLAS	66.49	4.63	6.56	0.44	21.20	1.41	0.00	0.00	23.39	1.56	17.02	1.19	2.16	0.15	146.75	9.38
HSC SAN ANTONIO	349.03	4.65	47.38	0.63	29.00	0.39	9.79	0.13	12.23	0.16	29.76	0.40	0.70	0.01	477.90	6.37
SW MED CENTER	230.11	3.49	13.68	0.29	21.06	0.33	7.07	0.11	8.44	0.13	17.22	0.26	6.55	0.13	312.10	4.73
UNIV OF VIRGINIA	274.62	4.23	32.71	0.50	50.61	0.78	1.00	0.02	12.53	0.19	34.15	0.53	0.50	0.01	406.32	6.25
UNIV OF WISCONSIN															0.00	0.00
TOTAL DAYS ALL INSTITUTIONS	10011.29	4.20	871.22	0.35	1060.76	0.54	168.56	0.07	438.60	0.18	681.85	0.27	169.64	0.08	13722.21	5.49
TOTAL # PIs	2501															

INSTITUTIONAL RESPONSES **TABLE 5** RATES OF RETURN

	# OF QUESTIONNAIRES DISTRIBUTED	# OF QUESTIONNAIRES RETURNED	RATE OF RETURN
CALIFORNIA INSTIT OF TECHNOLOGY			
CASE WESTERN RESERVE UNIV	279	124	44%
COLUMBIA UNIV	620	194	31%
CORNELL UNIV	408	251	62%
DARTMOUTH COLLEGE	114	72	63%
EMORY UNIV	180	116	64%
JOHNS HOPKINS UNIV	595	168	28%
NORTHWESTERN UNIV	200	113	57%
OHIO STATE UNIV	203	72	35%
RICE UNIV	134	95	71%
SRI, INTERNATIONAL	34	30	88%
STATE UNIV OF NEW YORK (SUNY)	889	544	61%
TEXAS A&M UNIV	345	155	45%
UNIV OF CALIFORNIA			
BERKELEY	487	211	43%
IRVINE	244	109	45%
LOS ANGELES	595	387	65%
RIVERSIDE	80	52	65%
SAN DIEGO	490	158	32%
SAN FRANCISCO	407	237	58%
SANTA BARBARA	300	49	16%
SANTA CRUZ	94	35	37%
UNIV OF CHICAGO	269	137	51%
UNIV OF CINCINNATI	179	84	47%
UNIV OF HAWAII	230	155	67%
UNIV OF HOUSTON	115	65	57%
UNIV OF LOWELL	28	22	79%
UNIV OF MICHIGAN	841	336	40%
UNIV OF SOUTHERN CALIFORNIA	240	183	76%
UNIV OF TEXAS			
DALLAS	29	28	97%
HSC, SAN ANTONIO	102	89	87%
SW MED CENTER	128	102	80%
UNIV OF VIRGINIA	205	104	51%
UNIV OF WISCONSIN			
OVERALL RETURN RATE	9064	4477	49%

INSTRUCTIONS FOR ADMINISTERING FORM FDP.100/FDP.200

As part of the institutional commitment to participate in the Federal Demonstration Project (FDP) each university is required to assist in the evaluation of the program.

As primary institutional representative you should assign to an appropriate official at your university the responsibility of administering this evaluation instrument. All PIs who have FDP grants should be identified and then contacted for their cooperation in this evaluation process. PIs who do not have FDP grants SHOULD NOT be included. It cannot be over-emphasized that the PIs themselves must be the ones to fill out the questionnaires. They are the only ones who can say how much time they have spent on the various categories of research administration, and in turn, how they might have spent time saved by the more streamlined FDP regulations.

FORM FDP.100/FDP.200 is a two-page questionnaire to be administered as a mail survey or to be given out in a small group setting where the PIs can read the materials, ask questions if they have any, and then fill out the questionnaire. In BOTH CASES the item entitled "ASSESSMENT OF ADMINISTRATIVE PROCEDURES ASSOCIATED WITH AGENCIES PARTICIPATING IN THE FEDERAL DEMONSTRATION PROJECT" must accompany the questionnaire because the PI's situation might be such that they should fill out that item instead.

If you use the mail survey alternative, you should make use of the cover letter template included in the materials. You should transfer the letter onto your letterhead, insert the required names, places, and dates, and send it along with the questionnaire. Please pay particular attention to the due date you insert at the bottom of the letter. You may further customize the cover letter to better fit the style of your academic institution, but be certain to make clear to the PIs that only they are in a position to properly respond to the questions.

If you use the small group setting alternative (such as during a departmental meeting), there is a background piece included in the materials (Evaluation of the Federal Demonstration Project), which should be provided to the PIs prior to their filling out the questionnaire. You do not need to retype this statement on your letterhead as long as the questionnaires are completed and collected at the end of the meeting.

The package being sent to the PI (if mailed) or handed to the PI (if given in a small group setting) should consist of four pages:

1. Cover letter from your institutional official OR the statement "SUBJECT: Evaluation of the Federal Demonstration Project (FDP)"

2. "ASSESSMENT OF ADMINISTRATIVE PROCEDURES ASSOCIATED WITH..."

3. "BASIC DATA COLLECTION INSTRUMENT FDP.100"

4. "PROFESSIONAL ACTIVITY PROFILE FDP.200"

COPY ON YOUR INSTITUTIONAL LETTERHEAD AND FILL IN NAMES AND DATES IN SALUTATION AND NAMES, DATES, AND PLACES AT BOTTOM OF LETTER.

TO: PRINCIPAL INVESTIGATOR
FROM: (insert name of prominent institutional official)
DATE: (insert date)
SUBJECT: Evaluation of the Federal-Demonstration Project (FDP)

Over the past three decades the Federal government has gradually increased the level of administrative control over the university's research. Though this process has been well-intentioned, many feel that it has become counterproductive. Our institution is part of an experiment being carried out in conjunction with a number of Federal agencies which fund sponsored research projects. Its primary objective is to reduce campus administrative processes imposed by Federal agencies without relinquishing the Federal responsibility for stewardship of the taxpayer's dollars. The hoped for outcome of the project is that faculty researchers will have available additional time formerly spent on what were quite possibly unnecessary Federal regulations.

One of the commitments on joining the FDP was our agreement to evaluate the benefits to the faculty and the research community from the more relaxed FDP rules (such as agency prior approvals seldom being necessary now, allowing the carryover of funds from one grant period to the next without written permission of the sponsor, etc.). From informal discussions with faculty who are aware of the changes, we already have heard support of the goals as laudable and that the changes will benefit researchers. Our problem now lies in documenting, in as direct a method as possible, any gains in faculty productivity. This is particularly difficult because the measures used are qualitative rather than quantitative. After review and discussion of the evaluation process with faculty, we have decided to use as our assessment measure the PIs' determination of how much time is spent on the administration of sponsored research. Note that you, as PI, are the only one who can properly respond to the questionnaire. Do not hand it to an administrative assistant or departmental colleague, even though they also might have spent time on research administration.

Although we recognize that taking the time to thoughtfully complete the attached two-page questionnaire is an imposition, the resultant data are necessary to meet our institutional evaluation commitment for the continuation of the more relaxed FDP regulations. It should be stressed that this questionnaire compares a time period PRIOR to the implementation of FDP (you are being asked here to recall how things were during 1988), with how things have been recently (during 1989) with those agencies which have participated in FDP.

Thank you in advance for your participation. If FDP succeeds it may serve as a catalyst for even further simplifications in the array of Federal regulations. Please return the completed questionnaire to (insert name and address of your institutional data collector) by (insert date for return which should be sometime in April or May, 1990 in order to catch the faculty before they leave campus for the summer).

SUBJECT: Evaluation of the Federal Demonstration Project (FDP)

Over the past three decades the Federal government has gradually increased the level of administrative control over the university's research. Though this process has been well-intentioned, many feel that it has become counterproductive. Our institution is part of an experiment being carried out in conjunction with a number of Federal agencies which fund sponsored research projects. Its primary objective is to reduce campus administrative processes imposed by Federal agencies without relinquishing the Federal responsibility for stewardship of the taxpayer's dollars. The hoped for outcome of the project is that faculty researchers will have available additional time formerly spent on what were quite possibly unnecessary Federal regulations.

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Thank you in advance for your participation. If FDP succeeds it may serve as a catalyst for even further simplifications in the array of Federal regulations.

ASSESSMENT OF ADMINISTRATIVE PROCEDURES ASSOCIATED WITH AGENCIES PARTICIPATING IN THE FEDERAL DEMONSTRATION PROJECT

You are being asked to fill out this set of materials because your name is on a list of principal investigators who have received awards in the recent past from agencies participating along with our academic institution in the Federal Demonstration Project.

If either of the following two situations is true in your case, DO NOT COMPLETE the two-page questionnaire, but simply print your name on the appropriate line below and return only this form to our office.

1. The provisions of the Federal Demonstration Project were not made known to you when you received your award and you have not been informed of them in the meantime, so you would not have been in a position to benefit from the relaxed regulations.

2. You did not have any awards from the FDP agencies during 1988 (which is prior to the start of the FDP), so you will not have a basis for comparison.

If neither of these situations is true in your case, please do your best to respond to the two-page questionnaire. Return it to our office as soon as possible.

_____ I was not aware of the FDP conditions on my award
Name

_____ I did not have any prior year awards from FDP agencies
Name

BASIC DATA COLLECTION INSTRUMENT FDP.100

PRINCIPAL INVESTIGATOR _____ (Optional)

DEPARTMENT _____

SITUATION: From your recent experience conducting research projects, please provide your best estimate of the amount of time spent on each of four general areas of research administration (prior approvals, pre-award costs, no-cost extensions, and carry over of funds). Examples of administrative actions are provided in the left hand column of the table below. Give estimates of the time spent in the year prior to the implementation of the Federal Demonstration Project (FDP) regulations (Column #2) and the time spent in the year when the FDP regulations were in effect (Column #3). Your responses should be related only to your grants from the agencies participating in the FDP.

INSTRUCTION # 1: CIRCLE THE INITIALS OF EACH OF THE FDP AGENCIES FROM WHICH YOU NOW HAVE FDP GRANTS.

NIH - National Institutes of Health
NSF - National Science Foundation
ONR - Office of Naval Research
DOE - Department of Energy
ARO - Army Research Office
EPA - Environmental Protection Agency
ADAMHA - Alcohol, Drug Abuse, and Mental Health Administration
NASA - National Aeronautics and Space Administration
AFOSR - Air Force Office of Scientific Research
USDA - Department of Agriculture
ARDMC - Army R&D Medical Command

INSTRUCTION # 2: INCLUDE TIME SPENT IN THE FOLLOWING THREE CATEGORIES AND REPORT THE COMBINED TOTALS ONLY:

(1) Include your direct time spent on each of the activities below.
(2) Include the time of your post-docs or your other research personnel on the activities below.
(3) Include your time in supervision of departmental or administrative assistants if they perform the activities below for you.
(4) Keep in mind that you are being asked to provide an estimate only.

Column 1 GENERAL AREA Examples of Administrative Activities required of Principal Investigators or their Support Staff	Column 2 PRE-FDP Estimated Number of Days or Fractions of Days Spent on this Activity Jan. 1988 to Dec. 1988	Column 3 During FDP Estimated Number of Days or Fractions of Days Spent on this Activity Jan. 1989 to Dec. 1989
PRIOR APPROVALS Certain budget changes, including expenditures on travel, general purpose equipment, consultants, or sub-contracts may require prior approval. Tasks may include preparing written justification for agency or institutional review		
PRE-AWARD COSTS/TRANSITION FUNDING When an agency gives you verbal approval that your proposal is funded but it cannot be processed in time for you to take advantage of some sizable equipment discounts or, if you have a continuing project, prior to the current expiration date, you may have to spend time obtaining alternative funding or approval for pre-award costs.		
NO-COST EXTENSION Approval is needed for a no-cost time extension. Obtaining such agency or institutional approval often requires written justification.		
CARRY OVER OF FUNDS Some multi-year grants require that all funds for a given budget period be spent or returned to the agency unless they explicitly approve carry over of funds. This requires an exact accounting if all funds are to be expended within a specific period, or written justification for carry over approval		
Total the number of days or fractions of days in columns 2 and 3 If the total in column 2 is larger that the total in column 3 complete the next item.	TOTAL TIME SPENT 1988 = _____	TOTAL TIME SPENT 1989 = _____
Subtract the total of column 3 from the total of column 2. The difference represents the time saved by the FDP on the four stated activities.	TIME SAVED = _____	

FDP.200

PROFESSIONAL ACTIVITY PROFILE

Principal Investigator _____ (Optional)

Department _____

If you saved time as reported on the previous form (FDP.100), provide your best estimate of how you utilized that time in the stated categories, using percentages. If you did not save time as reported on FDP.100, do not complete this form.

Report Effort in Percentages
Total Should Equal 100%

Research and other Scholarly Activities: _____

Such as research in the laboratory or other site; write final technical report; write journal article; literature search or review of research articles; prepare paper/presentation for scientific meeting; formal consultation; informal collaboration with colleagues; supervise graduate students; recruitment of graduate students; supervise doctoral dissertations; continuing education classes or conference attendance.

Sponsored Research Administration: _____

Such as regulatory requirements for animal care, human subjects, hazardous materials, DNA; prepare interim progress report; post award administration.

Teaching/Student Centered Activities: _____

Such as teaching (actual class time); class preparation; student advising.

Clinical or Patient Centered Activities: _____

Such as patient treatment; patient administration.

University Administration: _____

Such as university committees.

Extramural Activities: _____

Such as peer review of proposals or papers; community service; Federal agency advisory committees.

Other Activities (please specify): _____

_____
_____
_____

Mr. BOUCHER. Thank you very much, Dr. Johnson. The subcommittee expresses its appreciation to all three of our first panel witnesses this morning for their thoughtful comments on ways that we can better address the general system of university research funded by the Federal Government and, in particular, the indirect cost component of that funding.

Mr. Packard and Dr. Pings, I noticed that the recommendations that you have made to us have in common a basic element and that is that we change the indirect cost reimbursement method to, in effect, cap and set a fixed rate for the administrative component of those costs and then to allow depreciation for buildings and equipment to occur in accordance with accounting methods and in accordance with what the real devaluation of those facilities is. So there would be some actual determination made on that component of the indirect costs.

I notice, Mr. Packard, in your statement, that while you state that you're not prepared to recommend an exact number for what the fixed rate would be on the administrative expenses, that you would suggest something on the order of 50 percent for private universities and perhaps 10 points less, perhaps 40 percent, for public universities.

And my question to both of you is this: I think we all would agree that we should not, through whatever system we adopt, encourage a further increase in the percentage of indirect costs as a total of—as a percent of total research funding.

Today, the average of indirect costs—the average rate for indirect costs is about 51 percent. Now, if we took the recommendation to set the administrative floor alone at 50 percent for public universities—for private universities, and 40 percent for public universities, and then add to that an element for depreciation for buildings and equipment, do we not run the risk of increasing the overall percentage of research that is in the indirect category?

I'm just concerned that might be the effect, if we take that rough set of numbers.

Mr. Packard?

Mr. DAVID PACKARD. Well, I think you—there is an issue here. I think we have to fall back on the basic proposition that the Federal Government should pay its full fair share of the real cost of this research. Now—and that 50 percent figure I suggested—we looked at that several years ago and I don't think we had a very good evaluation of how much of that involved facilities and equipment.

I am proposing that separating out the facilities and equipment is a separate issue and I think that is what Dr. Pings feels the same way and that's why I said I don't want to give you a specific figure on this, because I think it will take some more study. It could very well be less than 50 percent if you limit it to certain things.

I am absolutely convinced that this can be defined in a way which will not need to be audited and which will eliminate all of those costs which is just very time-consuming, and expensive, both for governments and universities, and I think there's enough—in fact, I'm sure there's enough work being—already having been done about this, a number of studies, all sorts of algorithms on how to do this and everything else, that I think it would be very easy to

get this definition of what I'm talking about as a fixed administrative cost defined, so it would not add anything to the total. In fact, I'm convinced if it's down right, you can get rid of the auditing and reporting requirements, which would save money.

Mr. BOUCHER. Dr. Pings.

Dr. PINGS. Mr. Chairman, let me first comment that there is, indeed, a similarity between the recommendations in the Packard-Bromley report and in the AAU report, a very direct correspondence in the suggestion of splitting the rate into a facilities rate and an administrative rate. Our work which followed some two years later and had the benefit of the earlier Packard-Bromley report did suggest a modification on that administrative part, rather than being a set number, that there be a standard number which would allow the flexibility for those who would document to recover more and those below it would not recover it unless they could document up to it.

So that's an embellishment and it's perhaps—I'll talk more about that if you wish because I think there are some checks and balances in those features that would be very useful.

With respect to the actual number, though, of what it—whether it was a cap or it was that standard rate, I do not want to hazard to put a number that I feel like I could firmly vouch for because I am not skilled in these matters, but in the AAU report, in the appendix, you will find the results of a study done back in about that time frame involving the experiences on some 14 universities, and those administrative component—the administrative component now, which were total administration plus library, for that group of some 14 institutions, added up to something live—averaged out at about 32 points over both public and private with some difference among them.

That study, which was carried out by the Council on Governmental Relations, has since been significantly extended to include almost 120 institutions and, to our surprise, mine at least, the result has not changed very much. For that group, again, of mixed, private and public, that administrative component, separate from facilities, is about in the range of some 32 points.

Mr. Chairman, I am not here today to advocate that number because I think the final version, if we went in this direction, would be—have to be put in place with a rather skilled negotiation between professionals in OMB and those in the university community that have the expertise.

Mr. BOUCHER. I am going to come back to this, but yield for now to the gentleman from Arkansas.

Mr. THORNTON. Thank you for yielding because I am concerned about whether the basis for suggesting a lower recovery rate for public universities is based upon a conception that the cost of administration of a public university is less than that for a private university and I wonder what the rationale is for suggesting a lower recovery rate.

Mr. DAVID PACKARD. I will be very glad to answer that.

Many State-supported universities require that overhead they get be reimbursed back to the State, so they have no incentive to get the rate up. In fact, they have no incentive to keep it down because that makes them more competitive with the other universities. I

have a very specific case of a person, who's a research person at Stanford, and doing similar research at the University of Texas, I believe it is.

The Stanford overhead rate is 68- or 70 percent, whatever it is. The rate at the University of Texas is 35- or 40 percent. That is simply because if they raised it up, the State would take it away from them.

Mr. THORNTON. Mr. Packard, I was President of the University of Arkansas system until I decided to return to the Congress. A few years ago, our State did just that and took all indirect cost recoveries and put them into State Treasury. This was not only a reason that the indirect cost rate was low; it was also a reason that there was very little interest in doing Federal research in this university. Upon changing that, upon persuading the Legislature that this was not in the interest of advancing science, we had a remarkable growth in the amount of research which was provided by the university, including, as I am very happy to report on many occasions, the world's highest temperature superconductivity, which Drs. Allan Herman and Ging Ge Chang brought forward at that university.

My concern is this, I agree that indirect cost rates are generally lower at public universities because of pressures, but my question is whether the theory for that rate being lower is based upon a different cost of administration or if it's just recognition that inertia has caused that to happen?

Mr. DAVID PACKARD. I think it is simply recognition of what happened. I think there would be nothing wrong if you could get everybody working on the same basis. That would probably be a desirable thing to do.

Mr. THORNTON. Mr. Chairman, I just—because this came up, I appreciate your yielding to me to explore it. I think that we should be very cautious about proposing that there be a difference in indirect recovery rates as between public and private universities.

Mr. BOUCHER. The Chair thanks the gentleman and assures the gentleman that that point is duly noted and will be, of course, considered, along with other matters.

Let me return at this point to the question I was propounding to both Mr. Packard and Dr. Pings concerning the recommendations for essentially a cap or fixed rate for the administrative cost component of indirect costs and then allowing the depreciation for buildings and equipment to be set as the actual figures would indicate they should be.

Can you tell me—either of you—what is today in the total range of indirect costs the percentage that generally is assigned to administrative costs and the percentage that generally is assigned to building an equipment depreciation on average at universities?

Mr. DAVID PACKARD. I don't have offhand a figure. Dr. Pings may, but there is one point I wanted to make on this issue which I think is very important, and it's a difference between his recommendation and mine and that is that the fixed part of the cost—you arrive at a cap with some opportunity for negotiation, like the income tax, and I think that's wrong because that's going to still leave open all the negotiating, trading and horse-trading business and it's going to continue to cost money and we would be much

better off to fix a number that is appropriate and not have it negotiable.

Mr. BOUCHER. All right.

Dr. Pings, would you like to respond to that?

Dr. PINGS. To your question about the break-out on the—

Mr. BOUCHER. I am interested in that. I'm also interested in your response to Mr. Packard, so if you would do both.

Dr. PINGS. I fully agree with him for those institutions that would elect to, if something like the standard rate with option for documentation were in place for those institutions that chose to document, it would lead to the cost of and the preparation of the data to support that. I think it would put that institution under increased scrutiny and since our guess is that if we went that route, most institutions would elect the standard deduction, there would be a relatively small set left to—in the documenting case. Therefore, the auditors that were available from the Federal agencies would be able to concentrate on them.

I think there would be expense associated with that. I think there would be scrutiny of perhaps a level beyond that we are able to see an average institution subjected to now, which I think would be healthy if those were claiming higher rights. There are a couple of reasons that we thought in our committee that that would be worth it.

First of all, in some institutions, the intrinsic rates are considerably higher for reasons of how the institution is organized or for the particular burden of research that might be carried. Those facilities—those institutions that have very large facilities, fixed facilities, such as accelerators, may have to have a larger research administration to provide proper surveillance, so there are perhaps local differences.

I want to assure the Congressman from Arkansas that the AAU report does not advocate that there be a difference between the public and the private. We do call attention to the reality that there has been. As I said in my prepared remarks, we believe the intrinsic costs are very similar and we would certainly advocate that any institution that has not recovered, and as your experience chooses to do so, with proper documentation be allowed to so recover.

Mr. Chairman, there's one other reason we thought it might be worthwhile to have a number that was "the standard or threshold rate" with allowability for deduction—excuse me, documentation if another rate was requested. We think that is a protection and this is where I referred earlier to the checks and balances. We think that might be a protection for prescriptive caprice on the part of an agency, OMB, or maybe the Congress once that rate was in place in future years to say, "Well, let's save money by just arbitrarily pushing it down." If that rate were pushed down, and the institutions had the opportunity to opt and to document for a higher one, there would be a check and balance and it would be a quick signal that that rate was being pushed to a level that was causing internal stress, as the gentleman from Agriculture here on Tuesday suggested for the lower rate.

Mr. BOUCHER. Could I return now just to the question that I asked at the outset, which is, could either of you give me an esti-

mate of the percent of total indirect costs that would be assigned to the administration category?

Dr. PINGS. Yes, I have, again, some information that is in the Table 2 of the AAU report. I want to remind you that that document is now several years old, that the table there is based only on a subset of 14 selected institutions and it would need to be updated and there are some current data, but I can give you some numbers that are suggestive, if you will understand the data base, and for that group of 14, the average rate over all institutions, a mix of public and private, was 57 percent, 57 percent, and since that is higher than numbers we have been hearing in recent days of 51 percent averaged overall, that subset may have had a slightly higher rate, but if within that—

Mr. BOUCHER. That is the total indirect cost—

Dr. PINGS. That is the total indirect cost rate. Now, within that 57, for that group, space-related facilities, facilities-related costs—now that's not just depreciation; that's operations and maintenance, which heating, lighting, air-conditioning, which really dominate that component, would be 25 points. And the administrative-plus library would be 32. So the 57 breaks out—I hope my arithmetic is reasonably faithful here—to 25 plus the 32 in the administrative.

Mr. BOUCHER. I think there is some question of definition as to what items would fall into each of the two categories. As I understand the Packard-Bromley report, the administrative category would include some of the items that you have just suggested might be assigned to the building and space-depreciation category. I believe the Packard-Bromley report suggests that light, heat, insurance, general costs such as that, are properly assigned to the administration category. Am I correct on that assumption, Mr. Packard?

Mr. DAVID PACKARD. That's correct, and our proposal was that the operating costs of the facilities, the light and heat and janitorial service and all of those things, which are real costs and have to be covered, should be included in the fixed administrative figure, and the requirement of new buildings and new equipment should be separated out.

Now, there's another alternative, as you consider, of course, and that would be to include those operating costs as part of the direct costs and you'd have that option. I don't think it would make any great difference if you took that option. Then the administrative costs would be 20 points lower, maybe, substantially lower. That's an issue you may want to give some consideration to.

Mr. BOUCHER. Let me comment to these witnesses and thank them for their recommendations. It seems to me that the recommendation that there be a fixed administrative cost rate has a certain amount of appeal in that it avoids some of the very obvious problems that we have recently had where administrative costs that I think most people would agree are inappropriate have been charged to the indirect cost account.

We don't encounter those difficulties if we have a fixed rate for administrative costs, so I think it does have that appeal.

I want you, however, to contrast, if you would, the recommendation that you're making that we only cap the administrative costs

or establish a fixed rate for administrative costs to the recommendations that some others have made that there be a general across-the-board fixed indirect cost recovery rate that would apply not just to administrative costs, but to all other indirect costs as well, including the depreciation of building and equipment.

What comments do you have concerning that recommendation?

Mr. Packard?

Mr. DAVID PACKARD. I think it's wrong.

Mr. BOUCHER. Not surprised to hear that.

[Laughter.]

Mr. DAVID PACKARD. One of the reasons is that there's a big difference in universities, how much they have spent for facilities and equipment and those that have spent more ought to recover more. Those that have spent less ought to recover less. So I just don't think that makes any sense whatsoever.

Mr. BOUCHER. Would it be fair to say that the kind of accounting uncertainty and assignment of inappropriate costs that have occurred in the field of administrative costs would be less likely to occur in the field of depreciation for buildings and equipment?

Mr. DAVID PACKARD. I think the—I've said, the basic principles for dealing with cost of buildings are well-established. That's something everybody—any business does, anybody does. You have to take some money to build a building. You have to pay interest on it and you have to recover that interest.

Now, if you're borrowing money from the bank, you pay interest and you pay an amortization, which is related to depreciation, and that's the real cost and the government should take their fair share of costs determined that way. I don't think there is any difficulty whatsoever in defining that. The principles are well-established and some decisions have to be made about whether you wanted to take the interest at the average rate of the current return on endowment. You could also say that this could be done with tax-free bonds, which would justify a lower rate.

There are some alternatives you ought to consider, but I think that's very well-defined. And then you have everything else in the direct cost rate.

Mr. BOUCHER. All right, sir.

Mr. DAVID PACKARD. That does have to be defined and measured and controlled very accurately.

Mr. BOUCHER. All right.

I understand you to agree and to endorse the notion that it would be a fairly direct and straightforward accounting proposition to determine what the depreciation of buildings and equipment is. That would not be a system subject to the kinds of abuse that we've seen with regard to to direct costs.

But let me ask this question: Yesterday—the day before yesterday, when the subcommittee had the first of two hearings on this subject, we heard from the agencies charged with auditing the universities that Stanford, at least, had been very reluctant to turn over its auditing work and details to the Federal auditing agency.

Now, if that continues, and if that, in fact, is a trend and other universities emulate that reluctance, do we not continue to have a difficulty even with regard to what are the fairly straightforward accounting matters, such as depreciation of buildings and equip-

ment, and I guess where I am leading with the question is, should we—should we have mandated requirement that the universities turn over their internal audit materials to the Federal auditing agencies so that we can keep better track and have more accountability?

Mr. DAVID PACKARD. I'd like to comment on that. I realize that Stanford has been accused of that. The fact is that there are ordinarily two or three auditors involved in this problem. There are now 33 auditors at Stanford. And they just don't have encugh people to provide the information they are being asked for. It's going to take a couple years to do it. And I'll tell you, without any doubt, Stanford's learned its lesson. They know what this is all about and they're not going to repeat it. But it would be a mistake to pursue this and punish them for it.

Maybe I can relate it to the old story, you sometimes have to hit a mule on the head to get his attention, but if you keep hitting him, you may kill him. So that's the problem.

Mr. BOUCHER. Well, according to the Defense Contract Audit Agency, another whack or two on the head may be necessary.

Mr. DAVID PACKARD. Maybe.

Mr. BOUCHER. They are saying that even as of today, Stanford is very reluctant to turn over its internal auditing materials.

Mr. DAVID PACKARD. I know a lot about it. I looked into it and they've just been given a job that cannot be done in the time that the auditors would like to have it done. There's absolutely no reluctance to hold back information and I can assure you that's the case.

Now, I've looked into that and my very good old-time friend, Mr. Hewlett sat in on those negotiations. I know it ain't so.

Mr. BOUCHER. Okay.

Dr. Pings, do you have any comments on a general requirement that we simply insist that universities turn over their auditing materials?

Dr. PINGS. I think they should. I am not in a position to know the specifics of the institution as alluded to or the generality. I can tell you from—because it is going on right now, the auditors from the Department of Health and Human Services are on the campus of the University of Southern California this very week reviewing our rate negotiation for—setting our rate prospectively. We have welcomed them. We have made extensive documentation and we have offered to give to them a trainee that will show them how to use the computer terminal that will give them full access, on-line, to all of our information and we have made available to them all of our audits, including the management letters that have been attached to them from the recent past.

We have a system of open books and we have a credibility within our community that we believe is very high because of that. We acknowledge our stewardship of funds that have come from not only the Federal sector, but from donors, from our students and their parents that pay our tuition. We have nothing to hide. Do we occasionally make a mistake? Yes. Are we embarrassed that somebody called it to our attention before we catch it? Yes, but if they do, we're glad to have that insight.

Mr. BOUCHER. Thank you very much, Dr. Pings and Mr. Packard. I have additional questions, including some for Dr. Johnson, but my time is expired and I am pleased now to recognize the ranking Republic member of the subcommittee, Mr. Packard.

Mr. PACKARD OF CALIFORNIA. Thank you very much, Mr. Chairman.

I would like to pursue the point that was brought up by Mr. Thornton because I see a difference a little bit in the panel on that question, even though your testimonies parallel in very many areas.

Dr. Pings, in your statement, and I thought I wrote it down fairly accurately when you quote—said it. That is, "There are real differences in costs of research from one university to another," and I think you have a full section in your report, differences in indirect cost rates, and I've read a portion of that. I haven't gotten completely through it, but I think there is an admission, at least, that there are differences, cost of properties, the cost of buildings, the cost of personnel, the cost of a variety of other things that vary from one section of the country to another.

MIT will pay a lot more for more things than a university in Montana simply because of the difference in the cost of living and a variety of other reasons. With that, how do, then, we try to develop a system that would be fair to all universities or as fair as possible to all universities without inviting those that can perform research at a lower indirect cost, significantly in some instances, according to your—Section 4 of your report—a factor of as much as two, three, up to 10—between the highest and the lowest.

Reward some and penalize others. How do you avoid that in developing a system as you've suggested?

Dr. PINGS. We would like to think of it as not a reward and punishment, but as a straight-on acknowledgment of the true costs incurred, and indeed, the heating bills in Montana may be very high compared to those in California, but we may have different—different reasons that drive our costs. We think there should be an avoidance of windfall for those institutions that have rates that are intrinsically low. We think there should be recognition of the special high rates, particularly for facilities for those that have—in carrying out requests of an agency of—constructed very expensive facilities, either to build or to operate.

The intrinsic differences in those administrative costs across all institutions, the intrinsic differences are relatively small. I keep coming back to this, but the differences, where there are wide gaps, are largely from peculiarities of facilities. Let me expand a little bit.

An institution that has a medical school and very large programs in biomedical research, but not much in engineering or applied science, will have lower intrinsic costs, indirect costs to maintain the laboratories. It is the nature of the research generally that goes on in such facilities that they are more efficient to run.

An institution that has a large engineering program may have peculiar facilities that are essential to a particular endeavor that can be very expensive. On our campus, we've recently completed a facility that allows us to take a major program from the Depart-

ment of Defense in photonics. It's a consortium of five universities. The lead work is done on the USC campus.

The particular facility with clean rooms that was essential to carry that work out was constructed at a cost of $1000 per square foot, and that cost has to be somehow addressed. That would be one extreme and then institutions that have observatories or accelerators or large energy machines may have intrinsic costs that are large and so what we would advocate is, particularly since facilities cost—either the depreciation of initial construction or their operation can be measured. You can put meters on the electrical and the water supply. You can count square footage. There has historically been very little controversy either within our campuses between the principal investigator community and the administration or between the universities and the agencies over those facility costs. So when there are differences, they are acknowledged and compensated so I think that's the approach, to recognize the real difference, step up and pay it.

Mr. PACKARD OF CALIFORNIA. Mr. Packard.

Mr. DAVID PACKARD. There are some real differences and—for example, linear accelerator at Stanford, which is a very big project, that was funded almost entirely by Federal funds so that's not an issue here. That is, the university's operating it for the Federal Government, so that doesn't come into the issue, and that's true of certain other things where very specific facilities are provided by the government for the university to operate, Los Alamos, for example.

Now, there are some differences in the cost of living and the cost of living—

Mr. PACKARD OF CALIFORNIA. You might want to speak into your microphone.

Mr. DAVID PACKARD. There are some differences in the cost of living. Our company has operations in Colorado. Housing costs in Colorado are about one-half of what they are in the San Francisco area. Those could be recognized. They are cost of living indices that could be applied to certain areas if you wanted to use those.

Now, the other issue comes from the fact that there are some universities, like Stanford, for example, that have a big campus and a whole lot of things going on. Other universities, like California's School of Technology, which has a very small campus and they're doing nothing except things that are directly related to research.

Now, there's an argument that I think the Congress is going to have to resolve. Is the Congress going to provide through the support of research for those specific things that are necessary only for research and provide some other way to support these things that involved humanities and other arts and all those things that may be important or are you going to allow different rates for organizations that—universities that have different situation. I myself would—and I am trying to think that you ought to take a fairly narrow definition of those resources that are actually needed to support the research and that would give you a much closer range of things to consider.

That is an issue that I think the Congress has to decide.

Mr. PACKARD OF CALIFORNIA. Both of you have recommended a fixed percentage or a fixed cap with some modifications, which I think is very realistic and very reasonable. One of the benefits of such a program would be that it would simplify the whole process significantly. It would reduce considerable recordkeeping, auditing and paperwork and documentation and so forth, all of which I think the universities would be very grateful to see and, frankly, I would be very pleased to see that be the direction we go.

There's one thing that flexibility doesn't do, however, it does not prevent abuses. Even with flexibility, you have the potential of abuses. How would you address that? In other words, universities could still abuse the amount that they would receive or be reimbursed under a cap.

What would you recommend, in terms of monitoring, so that we do not have repeats of abusive practices?

Mr. DAVID PACKARD. The oversight responsibility of the Congress would enable you to do a specific investigation any time you want to. You have adequate means of dealing with this.

If it comes to light, through whatever sources, that there are some problems, you can make a specific investigation, determine the accuracy and possible correction of those problems. The thing that I think is important is to get rid of all those auditors who are there on a day-to-day basis. They are going to cause nothing but trouble and you have to get rid of them.

That does not relieve you from your rightful responsibility to oversee this process. You can do that anytime you want to.

Mr. PACKARD OF CALIFORNIA. I think that the auditors are there now because of the uniqueness of the problem. I think on an ongoing basis, you would not normally see that, but again to you, Dr. Pings, and then to you, Dr. Johnson, as to the flexibility that is proposed in your reports which I think are very, very possible, how do you monitor it and what do you recommend in terms of avoiding future abuses, even with that flexibility?

Dr. PINGS. Mr. Packard, the abuses that are alluded to, as Congressman Brown reminded us, are in a category where the total amounts are small compared to the total. If it's a dollar and it's a nonacceptable item, it needs to be called to attention and eliminated and taken out of the reimbursement.

We're talking in large amount about expenses that are not illegal. They are a large degree matters of taste and some of these are essential to the operation of the university at large.

What is under discussion is the allocation of those such expenses to the indirect cost rate or associating it with research. The rates that we're talking about that would be caps or standard, we are proposing to be significantly below what would be conceivably maximum and I think sufficiently below any level like that, that anything that might be considered discretionary is—was not being claimed.

I think there is reason, therefore, to assert that if it were a plausible number, such as has been mentioned here, in that range, that that is sufficiently low that none of these so-called discretionary items could possibly be included in it.

Mr. PACKARD OF CALIFORNIA. Dr. Johnson, do you have a comment on this or any other item that we've talked about?

Dr. JOHNSON. No, I guess I kind of endorse what Neal has been saying, Dr. Pings. Possibly we should look at some fixed cap, again strictly within the administrative area, but trying to control that afterwards or monitor it. I have no problems with auditors. They are on my campus all the time. They are in my office all the time and in the State of Florida, we're in the sunshine, sunshine law, so we have to have constant scrutiny, constant auditing. But I think what we have to be careful about is that this is no quick fix and it's not just one side that has to fix it.

As I've tried to point out here in my testimony, we've got to have a better understanding and communication between universities and Federal Government so we can understand what the problem really is, and what I'm worried about is that we're going to get a quick fix from either the Congress or from the agencies which we'll have to live with for some time. I think that we ought to be very careful about jumping into a quick fix to get rid of a situation which I believe is very limited in the number of universities which are involved.

Mr. PACKARD OF CALIFORNIA. I have one last question.

Tuesday, we heard more than once no legislative remedy is necessary, and today we have heard it from, I think, Dr. Pings. Do you agree with the other witnesses that legislation is not necessary?

Mr. DAVID PACKARD. I think some legislation is necessary. I think you're going to have to—I think Congress is going to have to impose some of these requirements, once you can sort out what needs to be done.

There is one other very key issue I want to raise at this time and it was raised by Dr. Likins,[1] who is the head of Lehigh and a member of our commission. He points out that these issues have to be looked at not only in terms of their legality; they have to be considered in terms of their propriety, and that's where we have not done a very good job, and that is the responsibility, I think, of the—everybody in the universities, not just to take advantage of every legal option they have. They've got to think about the propriety of what they're doing and that would go a long way toward avoiding these.

Mr. PACKARD OF CALIFORNIA. Dr. Pings, if legislation is not the remedy, how would you propose that there be administrative changes?

Dr. PINGS. I would like to hope that the Office of Management and Budget, which was leading a discussion between OMB and some agency representatives over the last four months, a group of individuals from the Federal Government and those agencies on one hand, and a group from the major research universities on the other, that have had a number of discussions about trying to put into place some of the modifications proposed in the Packard-Bromley or the AAU report and had been fruitful discussions in terms of identifying real opportunities for simplification; therefore, removing some of the areas or potential irritation and controversy. Those discussions, negotiations if you want, had progressed very well up

[1]Dr. Peter W. Likins, President of Lehigh University.

until 17 days ago when they were abruptly held in abeyance is perhaps the kind way to put it.

I would hope that those discussions could be renewed. They were being carried out in good faith and productively, and so Mr. Packard, I would say that maybe there is the—we ought to have an opportunity working together to see if we could make progress around the frameworks that have been discussed here on Tuesday and again today, working jointly and to see if we can arrive at that outcome from the working partners.

If that can't be done, then ultimately I, then—I am speaking as an individual now—might be suggesting that there would be time for Congress to tell us how to do it.

But I believe we have an opportunity to do a better job, both as awarding agencies and stewardship agencies on the part of the Federal Government and we have an opportunity to do a better job from our university campuses in this arena.

I hope those negotiations could be renewed.

Mr. PACKARD OF CALIFORNIA. Thank you very much.

Thank you, Mr. Chairman.

Mr. BOUCHER. The Chair thanks the gentleman and recognizes the gentleman from Arkansas, Mr. Thornton.

Mr. THORNTON. Thank you, Mr. Chairman, and let me first thank each of our witnesses for your good testimony today and, again, Mr. Chairman, to express my appreciation to you for scheduling this important series of hearings.

I think that it is clear from the testimony today that we need to be careful in developing remedies which do not adversely effect the quality of our scientific community and its capability to move forward with its major role in partnership with the government of the United States and, indeed, the fabric of our nation, dependent as it is upon research and development.

Do you agree with that, Mr. Packard?

Mr. DAVID PACKARD. I certainly do. I think that's really the essence of this whole issue. Yes.

Mr. THORNTON. General agreement across the panel, Dr. Pings?

Dr. PINGS. Absolutely.

Mr. THORNTON. And Dr. Johnson?

Dr. JOHNSON. Very much so.

Mr. THORNTON. The thing that I'm concerned about is that we do see and appreciate your recommendations that we need to do something to standardize and to eliminate some of the uncertainties in establishing administrative costs and I find myself persuaded by your testimony that that would be beneficial. In part because it would have the effect, would it not, of avoiding the misunderstandings that occur when doubtful items—and I appreciated your comment, Mr. Packard, about how important it is not to concentrate on legalities, but on proprieties, and it seems to me that developing a standardized base for administrative costs could be helpful in avoiding the situation we've recently seen.

Do you believe so?

Mr. DAVID PACKARD. Yes, I think that's very important. As a matter of fact, I think this is an issue that's so important it ought to be addressed by the cooperative effort, a bipartisan effort from the Congress and a cooperation within administration, and as I

said earlier, I think this is one of the most important issues that we have before the Congress today, in fact, before the country today. It seems to me that there's no reason why we can't get everybody together and get this fixed.

I would like to make one other observation. It's 45 years now since this endeavor was started. It's grown a lot of barnacles in the last 45 years. It's time to scrape the bottom and start over again.

Mr. THORNTON. Thank you very much, Mr. Packard, and you—let me express my own personal delight at your being here to give us the historical perspective that you've been able to provide to us today.

One of the things that I'm really concerned about is the tendency in today's quick-reacting society to over-react to problems that develop. You mentioned getting the attention of the mule. My granddad told me of the preacher in Mountain Spring, Arkansas, in the late 1800s who had been saving up to build a new church and it got to be more money than he could handle, over $300, and so he took the money and went south and made it nearly to Texas before they caught up with him, according to papa. He said it worked out all right; he'd only spent $20. I said, "What'd they do about that?" He said, "We brought him back and made him preach it out."

I do not want to suggest that we should simply make Stanford and other institutions which have—had some difficulties with this preach it out, but I do think that we ought to recognize that they have a very important role to play in keeping our nation strong and that the remedies that we develop out of these hearings should not be punitive in the sense of damaging the scientific establishment, but rather, should be preventative, to try and find better ways of dealing with these issues so that we do no have a recurrence of these high-visibility things.

Dr. Pings, would you comment on that theory?

Dr. PINGS. I heartily endorse that and where it's important that we—the issue having been raised, and of course, it's been on the table for some years as an earlier recitation of the history of these two reports that are before you today indicate, there's been a shortening of attention because of some specific instances recently, but it's important that we, therefore, recognize that there are opportunities for some improvements. Let's not tear up the system in the process and let us all get back, then, to doing the research that's so important to the country. I quite agree with you.

Mr. THORNTON. I want to assure you that I sense that that is the attitude of the members of this committee, our chairman and all of the members are, it seems to me, interested in exploring ways of improving this situation so that we do not damage the fine partnership that has been developed over the years.

Are there any comments by either Dr. Johnson—you've not commented with regard to my line of questioning.

Dr. JOHNSON. I think your line of questioning is exactly on target. In fact, this is what we have tried to accomplish with the Federal Demonstration Project and formerly the Florida Demonstration Project. This communication, understanding, and as I said earlier, there is no real quick fix, but what we must do is hard work and the only way we can do it is sit down together and try to

figure out what the problem is and work it out as universities, as the Federal Government and possibly as State agencies as well.

Mr. THORNTON. Mr. Packard.

Mr. DAVID PACKARD. Yes, I'd like to make an observation about this whole issue. Essentially, in my opinion, the opportunities today are much more important and much more attractive than they were when it began. If you look at what's been accomplished, and I looked at what my own company's done, we've been lucky in this regard. Our accomplishments have been based on the science that was developed in the 19th century. Physics, the laws of electricity and magnetism—we didn't know anything about the fact that the nucleus had a lot of other things to it. It was primarily, however, the fact that this educational system in the United States enabled us to get together the best engineers in the country and that's why we are successful.

Now, the basic research that has been done in the intervening period, the high-energy physics and the other things that Congress has supported, have given us a new understanding of the basic principles of nature. Heretofore, we could deal only with molecules that occurred naturally. Now we can make molecules that do not occur naturally. Glass, for example, is brittle. We can now make glass that is ductile and you know all about the genetic engineering.

So this is important, not only in terms of what it has been in the past, but there's a tremendous new opportunity and we're at the front—forefront of this and we'd better stay there.

Mr. THORNTON. Thank you very much, and with that note, Mr. Chairman, we need to move forward with the vision for the future, I yield back the balance of my time.

Mr. BOUCHER. The Chair thanks the gentleman and recognizes the gentleman from New York, Mr. Boehlert.

Mr. BOEHLERT. I'd like to thank all the witnesses for the expert testimony, and I'm particularly impressed with your credentials. Your credentials preceded you here.

Mr. Packard, I'd like to ask you, has your thinking changed much since you and Allan Bromley issued your report back in '86 or has your recommendation—are your recommendations today essentially the same as were advanced in '86?

Mr. DAVID PACKARD. Our recommendations are essentially the same, but I'll tell you another little secret. That committee had—was unanimous in its recommendations. Whenever you see a unanimous report by a committee, you know that there are some compromises in it.

Mr. BOEHLERT. Sure.

Mr. DAVID PACKARD. So there are some things, I think, that need to be considered, but the basic recommendations are still exactly what we made several years ago. I don't think there have been any—

Mr. BOEHLERT. Are you continuing your dialogue with Dr. Bromley? He's in a particularly unique position to help shape policy these days?

Mr. DAVID PACKARD. Well, I told you that I'm appearing personally, but I'm also still a member of the President's Council of Advisers of Science and Technology and I'm going to do whatever I

can to get the administration to support whatever's necessary in this program. I can't guarantee that I'll do it, but—

Mr. BOEHLERT. Do you have a feeling it's going to require legislation or would you agree with Dr. Pings that maybe we could do it without the necessity of legislation?

Mr. DAVID PACKARD. I think it's likely to require some legislation. And I wouldn't be concerned about that. I think we must do whatever needs to be done to get this whole problem fixed.

Mr. BOEHLERT. I'm just curious, in your testimony, one thing you said, some of the government contracts require the research people to make three reports every month, a financial report, a scientific report and a report of their work for people who do not understand science.

Is that the one that comes to us?

[Laughter.]

Mr. DAVID PACKARD. Well, speak for yourself.

Mr. BOEHLERT. I tend to think that—I agree with your assessment that it's a problem that has to be addressed and corrected, but I would share the sentiments expressed by Chairman Brown earlier that it's been magnified, I think, way out of proportion to the extent of the problem in terms of universality.

I just want to thank all of you for your outstanding testimony. I've read all the statements and I appreciate your willingness to contribute. I think the panel is evidence that our interest in this committee is headway, rather headlines. Thank you so much.

Mr. BOUCHER. The Chair thanks the gentleman and recognizes the gentleman from Florida, Mr. Bacchus.

Mr. BACCHUS. Thank you, Mr. Chairman.

I'd like to say a word of personal greeting to Dr. Johnson. Dr. Johnson, of course, Tallahassee and Florida State University. Doctor, I'm a graduate of the Florida State University College of Law—

Mr. DAVID PACKARD. I know you are.

Mr. BACCHUS. In fact, I was very pleased to receive a letter a couple of weeks ago from the Dean of the College of Law congratulating me on becoming the first graduate of the College to ever serve in the Congress. I sent him a note back. I thanked him for his thoughtfulness and I assured him that if I didn't accomplish anything else during my service in Congress, I had already assured that there would be one less attorney practicing law in Florida.

[Laughter.]

Mr. BACCHUS. Doctor, I am very interest in the demonstration project and have some limited familiarity with it based on my kinship with Lawton Chiles. I notice in your conclusion that you say that we seem to be placing inordinate emphasis on counting and recounting the silver. I know you'd agree with me that the people want us to count the silver. After all, it's their silver and we're going to do that.

Nevertheless, I agree with you that we need to pay much more attention to the end product of what we're trying to achieve, more productivity, more scientific discoveries, and I agree with former Senator, now Governor Chiles' philosophy about right-sizing government. We need to do more in Washington of what he's trying to do at the State level. I am an apostle of that philosophy.

I'm interested in the follow-through on the Florida Demonstration Project in the Federal area. You mention on page 6 of your testimony that the Federal Demonstration Project, which I understand now covers about a third of all the research nationwide, proposed a demonstration entitled "Representations and Certifications" to further streamline all these administrative requirements. You describe the struggle that you have, after several years of hard work in Florida, you have eliminated four of these administrative requirements and during that time, the Congress had added 25 more.

You say that this recommendation by the Federal Demonstration Project was "suspended due to OMB concerns." What were those concerns; what would this streamlining have accomplished; what would it have done in terms of cost-savings and improved productivity?

Dr. JOHNSON. I'm not real certain of what the OMB's concerns exactly were except some proprietary, I guess, within their own oversight, but what we were concerned about is that if you take a look at the administrative requirements which have been put upon the universities, which are needed requirements, drug-free workplace, accountability, lobbying and things of that nature, we have no question with those, but every regulation has to be submitted for each project, each individual project.

And what we as a demonstration wanted to do was to say why can't we have an institutional certification? That's what I think would streamline the effort and cut down the amount of paperwork that we see developing and all this increased work and paperwork definitely increases our indirect cost rates.

Mr. BACCHUS. I assume that because of the State's amendment to sunshine in government, which I share, that you have no problem providing more auditing information to the Federal Government and—

Dr. JOHNSON. Oh, heavens no. As I say, they're on our campus. I have a room set aside called "Auditors." Not "Men," but "Auditors."

Mr. BACCHUS. One final question. I note that you expressed particular concern about the failure of the State to—

Dr. JOHNSON. Yes, sir.

Mr. BACCHUS. —participate in this Federal project and that that is really one of the worst burdens that the researchers bear. I assume that now that he's Governor, Lawton Chiles will get the State of Florida really doing its job there, but what could we do at the Federal level to encourage more of the States to cooperate with this Federal Demonstration Project?

Dr. JOHNSON. I think, as I mentioned in my testimony, that we have to have some continued dialogue with the Federal and State involvement, and that includes Congress, the Legislative Branch, as well as the government of Senator Chiles. We believe that Senator Chiles will be a help to us as Governor, but again, he's pretty well tied up as a new Governor. He's got budget problems, budget crunches, but I think that what we are doing in the Federal Demonstration Project certainly fits his right-sizing within the State Government and any influence that the Congress can have on its—through its membership back to the States to increase or decrease,

I should say, the amount of administrative oversight that we have from the State Government would be greatly appreciated.

Believe me, that State oversight is considerably more than the Federal.

Mr. BACCHUS. Do you find some duplication, some contradictory impulses in State and Federal oversight?

Dr. JOHNSON. Yes, there are, and I believe that in some cases, the State may be even intruding upon the Federal responsibility.

Mr. BACCHUS. Thank you, Dr. Johnson.

Thank you, Mr. Chairman.

Mr. BOUCHER. The Chair thanks the gentleman and recognizes the gentleman from Maryland, Mr. Gilchrest.

Mr. GILCHREST. Thank you, Mr. Chairman.

Well, this is a fascinating topic and it seems like we're listening from the experts here this morning. I'd like to ask Dr. Johnson a question that's a little bit related to the gentleman from Florida's question that deals with the Productivity Assessment Task Force in the Federal Demonstration Project which seems, for whatever reason, that I'd like you to describe the—you've reduced time spent on administrative tasks by 15 percent and you mentioned that the program is expanding.

I'd just like to know what the current status of that program is and what you see for the future of it in helping to reduce administrative costs and the cost of this over-burdening bureaucracy.

Dr. JOHNSON. As I've tried to mention in my summary here this morning is that I do see a bright future for the Federal Demonstration Project, but it has to have some type of formal recognition. I believe that these people who have worked so hard on the project, State agencies as well as universities, need to have some encouragement to continue what they're doing.

Had we been able to look at the Bromley-Packard report or other reports, maybe looked at those and done some suggestions for demonstrations, today we might have a better solution for some of the indirect costs. I believe that what we have done in the Florida Project and what we are continuing to do in the Federal Demonstration Project definitely does reduce cost of not only PI [Principal Investigator] administration, but university administration. We need to have recognition that that can be further developed and accepted by the Office of Budget and Management, OSTP, and even the Congress.

So we're willing to work with you people in any way we can.

Mr. GILCHREST. How would you suggest that—in what form should that recognition come? How can we help with that recognition?

Dr. JOHNSON. Well, I think that if Congress, without formal legislative action, could make recommendations back to the agencies and to OMB, that indeed, this is a good study; it's a good mechanism and I think you should give them encouragement to continue and encourage your staff to work more closely with the Federal—with the universities to help develop more demonstrations and to get some of these demonstrations on line and reduce some of the requirements, not necessarily to reduce, but to retailor some of the requirements within A-21 or some of the other circulars, that I think that through congressional urging, pushing the agencies and

OMB and other parts of the Executive Branch, I think would come along and more formally recognize what this group is doing and, believe me, they are working very hard and it's not the heads of agencies which are at the day-to-day activity, but we have the blessing of the heads of agencies, but keep in mind these agencies do change heads from time to time, so we have to reinstruct them.

Mr. GILCHREST. You would disagree with any new legislation?

Dr. JOHNSON. I believe I would at this point, yes, sir.

Mr. GILCHREST. Even if—you said that the new—the heads of agencies will change from time to time, which means their perspective on the needs for administration might change.

Dr. JOHNSON. That's correct.

Mr. GILCHREST. And you don't think some statutory recommendation for consistency across the board would be in order?

Dr. JOHNSON. Personally, I don't believe it would be, although I'd like to leave it up to the members of the Florida Demonstration Project, maybe bring a recommendation back to this body or to this committee which would be a little more meaningful than what I can say from a personal standpoint.

But I just do not see the need at this point for a formal legislative action.

Mr. GILCHREST. Dr. Packard—or Mr. Packard, would you agree with Dr. Johnson in that assessment, then?

Mr. DAVID PACKARD. Well, in the first place, I think that Dr. Johnson—the program has been a very salutary one. It demonstrates that some of the things we're talking about will, in fact, do what we thought they would do, so I think that's been a very good program.

But I think the way to give them recognition is simply to adopt this on a nationwide basis and simply tell them, you helped us confirm that this could be done; we're going to move ahead and not have any more demonstrations and we're going to get it done.

That's the best recognition you could give them.

Mr. GILCHREST. So in that case, then, we could adopt legislation based on the demonstration project.

Mr. DAVID PACKARD. Well, it would include—it would include inputs from the demonstration project. It would include inputs from the work that Dr. Pings has done. It would include some additional recommendations, I think, that'll come from the White House and some from the Packard-Bromley report. I think you have all of the information you need here to put a very logical productive program into effect and I don't see any reason why we shouldn't just go ahead and do it.

Mr. GILCHREST. Looking at it from that perspective, Dr. Johnson, do you think that type of legislation will be a good idea?

Dr. JOHNSON. It may well be, and I think what I should emphasize is that we not only look at possible demonstrations, but we can study the problem from a number of perspectives and come up with recommendations that don't need demonstrations and I think there's where we can help the Council—I mean, the Congress, and other agencies, but I'm just not sure what form of legislation. I guess that's why I'm so hesitant at this point.

Mr. DAVID PACKARD. I don't think we're talking about what the form of the legislation should be. I think it is very likely that some legislation will be necessary to do what needs to be done.

Dr. JOHNSON. It may be.

Mr. GILCHREST. The type of legislation that doesn't need to beat the mule anymore, I guess.

Mr. DAVID PACKARD. Well, I think that that's—the issue is to decide precisely what legislation will be needed. Now you may end up deciding none is needed. I don't think you'll have that outcome, but it's not out of the question.

Dr. JOHNSON. Keep in mind that the group that's been working on this for the last six or seven years have been strictly voluntary people, and they are enthusiastic people. They work hard. If we get too structured, then you might be having problems with continued enthusiasm. So we don't want to lose that enthusiasm.

Mr. GILCHREST. I couldn't agree more with you on that.

Dr. Pings, any thoughts on the—

Dr. PINGS. Your—the very holding of these hearings is going to be immensely helpful. I hope you can urge the Office of Management and Budget and the program agencies to continue to work with us on the details of indirect costs and on the very salient features of these demonstration projects.

We need that spirit of cooperation between the principal parties involved. Quite frankly, without it, all the strictures in the world are going to make this thing very difficult.

But give us a chance and you can help us, I'm sure, by urging the Executive Branch to have its principals reopen these discussions with us. Let us take some steps to make progress with this number of very good suggestions that have been on the table and have been sharpened somewhat during these two days.

If and when we find that there are some residual problems or ambiguities that can only be resolved by clarifying legislation, then I think we can come back to you with specific suggestions that if you will do this or that or provide that—that language, it will move the thing to another level of satisfaction. Frankly, I believe working together, we have some homework yet to do before we could even help you decide what those areas might—of legislation might be.

Mr. GILCHREST. Thank you. That's an excellent recommendation. Thank you very much, gentlemen.

Thank you, Mr. Chairman.

Mr. BOUCHER. The Chair thanks the gentleman and recognizes the gentleman from Oregon, Mr. Kopetski.

Mr. KOPETSKI. Thank you, Mr. Chair, and I, too, commend you once more for having these hearings on this most important issue and I do want to welcome and thank the panel.

The—I think Mr. Packard said it all when he said we have enough information. We have to assimilate it now and come up with a proposal and so I have a statement for the record. I will not read it and I don't have any questions. Mine have been answered by the previous questions and statements.

I do want to recognize Mr. Packard and his fine corporation, which is—has a significant influence in Corvallis, Oregon, with Oregon State University, which I'm proud to represent. It's one of

the great partnerships in this country is what goes on through Hewlett-Packard and Oregon State University and we talk about moving forward as a society and developing new technologies, and therefore, new jobs and it happens to these kinds of partnerships and we—I can give just another quick example. Twenty miles away, with Teledyne, which was a government research center with the Bureau of Mines. The research that occurred there in the '40s, we developed titanium and these kinds of metals and it's these ventures together that have a strong role economically for our country and I commend people such as Mr. Packard for that vision and working-together approach.

[The prepared statement of Mr. Kopetski follows:]

CONGRESSMAN MIKE KOPETSKI

COSTS OF UNIVERSITY RESEARCH HEARING, APRIL 25, 1991

SCIENCE SUBCOMMITTEE

Mr. Chairman, thank you for recognizing me this morning. I'm pleased that my schedule will permit me to stay for awhile today. I'm extremely interested in the indirect costs issue and commend you on scheduling two hearings on this subject. Two hearings, in my mind, denote the importance of this issue.

We have all heard of the recent abuses of indirect costs, the yacht and the 19th century comode at Stanford, the $500,000 that Harvard and the $731,00 that MIT will each return to the federal government. I am also sure that more abuse will be uncovered, and I support scrutinizing our universities. Already this year on several occasions several members of this subcommittee have expressed concerns for young scientists and the difficulties they are facing in efforts to secure funding. Imagine for a moment how many young scientists we could support with the millions of dollars that have been selfishly wasted by some of our universities.

I believe, overall, that most of our universities are ethical and professional in their handling of indirect costs. While the recent cases of abusive behavior have drawn significant press and focussed criticism on the university community, we must remember the benefits that indirects costs bring to our society. How many recent medical discoveries would have been made without university administration support or assistance from the federal government with the utility bills?

I want to support our university researchers, and particular those at Oregon State University in my district. To do this, we must assist their research efforts wherever and whenever possible. This must be done in an environment where indirect costs are used wisely to the benefit of science and research. Chairman Boucher, I look forward to working with you on this issue and hope we can sit down together following today's hearing to discuss this issue further.

Mr. DAVID PACKARD. I thank you, but I'd like to point out there's always a certain amount of luck involved in these matters.

[Laughter.]

Mr. KOPETSKI. That's right. Getting here, too.

Mr. BOUCHER. The Chair thanks the gentleman and without objection, the gentleman's opening statement will be made a part of the record.

I have one additional question of this panel and before propounding it, let me thank you for your patience and over such a lengthy period this morning sharing your views with us.

One additional question. We have heard some suggestions that the monies which universities are receiving through the depreciation component of indirect cost reimbursement is not actually being devoted to the upgrading and enhancement of research facilities on the campuses. Some examples we've been given where principal investigators just being assigned money as discretionary funds and I'm wondering if you have any comment about the appropriateness of either the Congress or perhaps the OMB, through its Circular A-21(a), directing that monies which the university receives for depreciation of buildings and facilities be devoted to enhancing those very buildings and facilities. Suppose we restrict and earmark those funds just for that purpose?

Mr. DAVID PACKARD. Well, that's a legitimate question, and universities don't have a mechanism for doing this as well as it should be done. If you just want to take a minute, I can tell you how this works in the corporation.

The corporation—you have income and expenses and from that, you get your operating profit. From your operating profit, you deduct this depreciation amount; you deduct your Federal taxes and then you have net profits after that. Now, actually you don't look at the net profits only; you look at your cash flow, and there are a number of ways that we've got. In the case of our company, we decided that we were going to start and finance it entirely from ourselves all the way through and the only investment that was made in our company was a little over $500—we devoted the depreciation allowance to adding new facilities and equipment. And that, then, provided the opportunity for us to build this up as we went along.

Now, that can be used—leverage, so to speak, by using that cash flow to support the long-term borrowing. That provides some risk because you may not have that cash flow 10 years from now, so I was always very conservative on that point.

But I think it would be very desirable to require the university to look at this and so they're investing their endowment money for these buildings and equipment, and they should be reimbursed for that investment and a fair share by the government if the interest costs and depreciation costs which, in effect, would restore this—their endowment.

The mechanism is not in place to do that as well as you'd like and that's an issue, I think, that does need to be discussed.

Mr. BOUCHER. Dr. Pings.

Dr. PINGS. I'm not an accountant, but depreciation is a real cost of running our business, in doing our research and in the spirit of

the long-term legislation and the spirit of A-21, it therefore the Circular seems it should be recognized.

We could, in private universities, where we keep our books by fund accounting, we could take the component of the indirect cost rate that is credited to us each year and move it from the current fund to the plant fund and make very visible, therefore, that we were assigning it for that purpose.

I am told that type of a maneuver becomes very difficult for public institutions which have different sets of accounting rules for reasons that I wouldn't pretend to understand, much less explain to you, so there's a danger here of an overly simplistic approach.

Mr. Chairman, let me report, since this was raised here on Tuesday, and I realized I was ignorant about my own institution, I inquired what went on. We, in the last year at the University of Southern California, recovered $4.9 million as the component of the indirect cost recoveries coming to our campus that could be identified as having been claimed for depreciation.

We spent $28 million, university-wide, in enhancement and improvement of plant. I could not quickly get a breakdown of that, but if you assign half of 40 percent to research functions, which, given our other scales are consistent, we are spending much more from other resources than, in fact, we are taking in from this component.

I hesitate to generalize, but I would guess that probably is representative, if not typical, of what is going on.

Mr. Chairman, may I comment on one other point you raised, which is not exactly the depreciation. You alluded to universities that give back some of the indirect costs or overhead to their principal investigators, therefore, raising the image that perhaps those weren't real costs after all. That's not the case, of course. We only are reimbursed after the fact for costs that have already been incurred and bills have been paid and sometimes not even in a very prompt manner. So we are only getting back what we have spent for the things that are listed here, which does not include assigning money to principal investigators.

That becomes, though, when it comes in, part of the general income of the institution, off-setting those costs that have been paid, and certain campuses and certain departments at times will try to recognize the success of their principal investigators, their faculty members in attracting outside funds by providing some sort of an incentive program to them.

They need necessary—they need seed money. They need start-up money in small amounts. It becomes very easy to assign that money by an algorithm that attaches it to the direct costs, and therefore, it looks like it is rebating a refunding of indirects. It is a coincidence, but it is one where the image is, I concur—it gives us some trouble and one of our report recommendations, in fact, is to encourage our campuses to think about a different way of describing that phenomena, which is a totally legitimate necessary incentive, but it is not really reimbursing of overhead.

Mr. BOUCHER. Thank you for that thorough response.

Dr. Johnson, would you care to comment?

Dr. JOHNSON. I would just make one quick comment, that I think one of the bigger differences we have between publics and privates

is that the publics, I believe, do not, as a rule, depreciate their facilities. We do use the use cost for equipment, but again, I don't believe we—and Florida State doesn't—use the depreciation costs for buildings, so that's one of the reasons we have the big difference between public and private. But we do reinvest our monies much into the science, a good example of what we were able to do with the attraction of the magnet lab to Florida State University.

Mr. BOUCHER. Well, that's a curious point, and I was unaware of that fact. You have suggested, I believe, that public universities generally don't recover as much for the use of buildings and depreciation of buildings as do private universities primarily based on accounting differences?

Dr. JOHNSON. I can't speak for all of the universities that are public, but I believe Florida State—within our indirect cost proposal, we do not use the depreciation of buildings. We use a use charge for equipment.

Mr. BOUCHER. Does that approximate what other universities—

Dr. JOHNSON. No, lower.

Mr. BOUCHER. It's lower?

Dr. JOHNSON. Yes.

Mr. BOUCHER. Why do you choose to do it that way if you could receive more funding for research if you had depreciation as a part of your indirect costs?

Dr. JOHNSON. As I say, I am not the accountant, so I don't think I want to choose—I don't believe I can answer that effectively.

Mr. BOUCHER. Thank you for that information, and I express the Chair's thanks to this very excellent panel of witnesses. Your comments have been thought-provoking and helpful to us and they'll receive continuing consideration as we continue our investigation.

With the Chair's thanks, this panel is dismissed.

We now welcome our second panel of witnesses this morning. These are university researchers, administrators and department heads. They will generally discuss from the standpoint of the university, the indirect cost recovery system.

We have chosen a university President, who will speak with respect to the administration's point of view; an academic department Chairman, who, as both an administrator and a researcher, can offer a slightly different perspective and a person who is a researcher who would be expected to be concerned about the extent to which indirect costs may deprive Federal funds from the research grants themselves.

We welcome this afternoon, Dr. John Marburger, the President of the State University of New York at Stony Brook; Professor Jon Clardy, the Chairman of the Department of Chemistry at Cornell University; and Professor Howard Schachman, from the Department of Molecular and Cell Biology at the University of California at Berkeley.

Your prepared statements will be made a part of the record and we would welcome your oral summaries of those statements and, Dr. Marburger, we'll begin with you, sir.

STATEMENTS OF JOHN H. MARBURGER, III, PRESIDENT, STATE UNIVERSITY OF NEW YORK AT STONY BROOK; PROFESSOR JON CLARDY, CHAIRMAN, DEPARTMENT OF CHEMISTRY, CORNELL UNIVERSITY, BAKER LABORATORY; AND PROFESSOR HOWARD K. SCHACHMAN, DEPARTMENT OF MOLECULAR AND CELL BIOLOGY, STANLEY HALL, UNIVERSITY OF CALIFORNIA AT BERKELEY

Dr. MARBURGER. Thank you very much, Chairman Boucher, and members of the committee. I am certainly grateful for the opportunity to speak today about this issue. Your hearings certainly do provide an opportunity to improve public understanding of the research funding process and, I hope, to put into perspective these recent disclosures suggesting that the government has been charged inappropriately within this process for some expenditures.

The hearings may also make it possible to move beyond these dramatic incidents to the larger issues of the partnership between government and higher education. This partnership, as Mr. Packard eloquently testified in the previous panel, has created over nearly five decades the most successful enterprise in history for the production of new knowledge and intellectual leadership, and no effort should be spared to protect and improve it.

Concerns about indirect costs are not new, nor are useful suggestions for addressing those concerns. In my written testimony, I refer to the two reports that have been so extensively discussed in the previous panel and, indeed, these reports are quite well-known throughout the research administration community and I'm here to testify that they receive generally a widespread support.

I also want to acknowledge that there are problems associated with the identification, management and allocation of indirect costs, but I think that the response of universities to the investigations of the House Committee on Energy and Commerce will be positive and vigorous, precisely because most of us perceive deep problems in the system of Federal support for research and we are concerned that the solution to those problems might be delayed once again by a diversion of attention to abuses which, while serious, account for only a small fraction of the problem.

I must say that I'm gratified by the tone and the intelligence and the high quality of witnesses and testimony at these hearings. I believe that we're going in the right direction.

From the university's point of view, the greatest problem with the current indirect cost system is the fact that expenses exceed revenues for sponsored research. I believe that the area in which the imbalance is greatest is not in administrative costs, but in facilities costs. That issue has been discussed to great—greatly in the previous panel.

The state of research facilities nationwide has been in bad shape for nearly two decades. It's been the subject of numerous studies and I think it would be a setback for America's leadership in science if the facilities initiatives were abandoned as a result of the current concern about these other matters.

I can shorten my testimony somewhat because of the excellent responses that have already been given, so if you will permit me, I will move along to an important statement, I think, about public

versus private institutions. Some people believe that public universities have less incentive than private ones to keep costs down because State funds are available to close any budget gaps.

That's certainly not the case—at least not the case any longer in New York State. The fact is that most States where the largest public research universities are located, have reported enormous budget shortfalls for the current fiscal year causing major budget reductions in all agencies and in the support of higher education. In the State of New York, the attitude of the State towards the indirect cost reimbursements from the Federal Government has changed very rapidly within the past 18 months and I believe that the management of these indirect cost funds in New York State henceforth will be much more similar to the management that you find in private universities.

A great deal of attention is being given by the States to optimizing the relationship with the Federal Government through its research—through their research universities, and so there are—while there are incentives, there are also increased consciousness—there's also increased consciousness about the possibility of reimbursements of costs.

Nevertheless, it is true that the State contributions have made it possible for public universities to keep overhead rates lower on the average than in private institutions. Again, the greatest differences appear not in the administrative costs, but in the way facilities costs are covered.

At our institution, too, as well as at Florida, we do not depreciate the buildings, but we do have a use allowance.

Perhaps the greatest incentive currently operating to keep overhead expenses under control is that universities fail to recover all costs, and therefore, expansion even of reimbursable services always cost us something.

I believe that the most important step that could be taken quickly is for OMB to adopt recommendations that have been advanced in the Packard-Bromley and the Pings reports. These are practical recommendations; they've crystallized from a careful process in which representatives of all parties have participated and I think they strike a balance between the big issues of low visibility and the smaller issues of very high visibility.

Legislative action on accounting methodology and categories of allowed expense would seem to me to be wrongly placed. Now, these are appropriate matters for the regulatory agencies and, despite difficulties, the current regulatory system does appear to work reasonably well.

I personally seriously doubt whether any steps can be taken in the short run to save significant amounts of money by adjusting indirect cost policies. All the data I have seen indicate that a responsible approach to indirect costs will increase the costs to government.

The reluctance of Federal agencies to pay the full costs of research they sponsor has had a cumulative effect that is undermining the national research enterprise. Perhaps the worst spin-off of the current alarm about improper allocation of administrative costs is that it will distract attention from this important problem.

The research university community will respond to these concerns with alacrity because it feels threatened by a much larger issue to which I am sure your committee will be devoting much future effort and that is the state of the research infrastructure in higher education.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Marburger follows:]

STATEMENT BY

PRESIDENT JOHN H. MARBURGER

ON INDIRECT COSTS OF UNIVERSITY RESEARCH

BEFORE THE

SUBCOMMITTEE ON SCIENCE

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

APRIL 25, 1991

Chairman Boucher and members of the committee, I am grateful for the invitation to appear today to speak and to respond to your questions about the issues of indirect cost allocations and reimbursements on federal research grants and contracts to universities. This issue has become an important focus for questions of the responsible use of public funds. Our national pride in the extraordinary accomplishments of our research universities is well justified, and all whose efforts have brought this excellent system into existence are puzzled and dismayed by dramatic revelations of improper charges that seem incompatible with the high standards necessary for scientific achievement. Your hearings provide an opportunity for the public to understand the significance of these disclosures and to move beyond them to the larger issues of the partnership between government and higher education. This partnership has created over five decades the most successful enterprise in history for the production of new knowledge and intellectual leadership. No effort should be spared to protect and improve it.

I am speaking today from the perspective of a career that has included the roles of faculty investigator, dean, president and trustee, all within mainstream research universities that compete successfully for federal funds. With other colleagues in the State University of New York system, I have been working for improvements in the management of the sponsored research enterprise on a Statewide level. In 1986, I served on a Government-University-Industry Roundtable that included OMB officials in discussions of proposals to limit recovery of administrative costs. My purpose today is to acknowledge problems, to indicate readiness to solve them, and to urge support for solutions adequate to the complexity and diversity of our nation's research enterprise.

Chairman Boucher's letter of invitation included the following paragraph, to which my remarks are intended to respond:

"Because of long standing concerns about indirect cost allocations and reimbursements to universities conducting research sponsored by federal agencies, the Subcommittee is interested in your assessment of the scope and extent of the problem. We are especially interested in your views on how indirect costs can be properly identified, what costs should be allowable, and what positive incentives can be developed to encourage rigorous accountability and control of rising indirect costs at universities. We would like you to make recommendations for any legislative or administrative changes which you believe would improve the current indirect cost system and associated policies."

1. History of concerns about indirect cost allocations and reimbursements to universities conducting research sponsored by federal agencies.

During my remarks, I am going to refer frequently to the excellent report prepared by a committee of the American Association of Universities under the chairmanship of Provost Cornelius Pings of the University of Southern California (#2 below). That report includes a history of the federal regulations governing the compensation of universities for overhead costs on sponsored research. An effort by the Office of Management and Budget to limit the administrative portion of those costs in 1986 led to intense scrutiny of the entire indirect cost process and eventually produced important suggestions for positive changes in the system. The three most useful documents to come out of this period are:

1. "A Renewed Partnership", A Report of the White House Science Council, February, 1986. Prepared by the Panel on the Health of U.S. Colleges and Universities, David Packard, Chairman, D. Allan Bromley, Vice Chairman. (Packard/Bromley Report)

2. "Indirect Costs Associated with Federal Support for Research on University Campuses: Some Suggestions for Change", Report of the Ad Hoc Committee on Indirect Costs to the Executive Committee of the American Association of Universities, December 1988. (Pings Report or AAU Report)

3. "Research Facility Financing: Near-Term Options", a working paper distributed by the Government-University-Industry Research Roundtable, February 1991. (GUIR Report)

Concerns about indirect costs are not new. Nor are useful suggestions for addressing those concerns. If any good can come of the ill wind that once again has drawn attention to these issues, it will be in actions to take advantage of some of the thoughtfulness that has been lavished on this problem in recent years.

2. Assessment of the scope and extent of the problem.

I want to acknowledge at the outset that there are problems associated with the identification, management and allocation of indirect costs. The embarrassment that Stanford suffered in the recent hearings of the House Committee on Energy and Commerce has been felt by all of us, and we do

not want the experience repeated. Stanford President Donald Kennedy has issued forthright statements accepting responsibility for errors in allocating certain costs to pools for federal reimbursement, and he has also indicated what steps are being taken to prevent similar errors in the future. Research university presidents and chancellors everywhere are scrutinizing their accounts to discover any similarly dubious allocations, and I am aware that several have already indicated they would repay the federal government for charges that they have determined themselves to be inappropriate.

The response of universities to the investigations of the House Committee on Energy and Commerce will be positive and vigorous because most research university administrators perceive deep problems in the system of federal support for research. We are concerned that the solution to those problems, clearly identified already in the 1970's, will be delayed once again by a diversion of attention to abuses which, while serious, account for a small fraction of the funds at stake.

The "problem" currently attracting attention is not one of greed and personal aggrandizement. It is a management problem. University managers are struggling to administer organizations that are among the most diverse and complicated in our society. Part of that complication arises from the very insistence on accountability that the public demands of those to whom it entrusts its funds. The expense of performing sophisticated research today is substantially greater than comparable projects even as little as ten years ago because of increases in regulatory complexity. The cost of regulation is acknowledged by the Office of Management and Budget, and its rules regulating the accounting for that expense are a reasonable way of finding out what the government ought to pay for it.

In fact, the administrative costs that have been the focus for years of criticisms by faculty as well as by government auditors are reasonably well understood by accountants and managers. The administrative component of indirect cost is among the least variable for different universities. Unfortunately, it is also one of the more complicated to identify and account for. In my experience, however, every serious analysis of administrative costs in a particular institution has concluded that the expense actually incurred in support of sponsored programs exceeds the amount collected from sponsors. That is the reality that motivates the zeal of institutional managers toward increased recovery.

From the universities' point of view, the greatest problem with the current indirect cost system is the fact that expenses exceed revenues for sponsored research. The area in

which the imbalance is greatest is not in administrative costs, but in facilities costs. The state of research facilities nationwide has been deplorable for nearly two decades. It has been the subject of numerous studies, and until the Energy and Commerce hearings drew attention so dramatically to questionable allocations on the administrative side, it is in the facilities area that all of us hoped for remediative action. It would be a setback for America's leadership in science if the facilities initiatives were abandoned as a result of the current concern about other aspects of indirect cost recovery.

I do not mean to diminish the seriousness of any incident in which the public trust may have been betrayed. But congressional policy makers must be aware that compared with the facilities issues, the funds at stake in questionable administrative cost allocation practices are very small.

3. How can indirect costs be properly identified?

The Office of Management and Budget specifies indirect accounting practices in its Circular A-21. The history of this document is set forth in the Pings Report. Studies informing that report also found that most knowledgeable respondents believed that the basic A-21 framework was satisfactory. In my opinion, there is no real problem identifying proper administrative indirect costs given the A-21 regulations. It is more difficult to distinguish between instructional and research costs, because in research universities the two activities are practically inseparable.

As a matter of practicality, the specification of appropriate costs should not be accomplished through legislation, but through regulation. OMB now has a large set of useful suggestions on the table for reducing the contentiousness of the indirect cost process. OMB should move to implement some of these proposals.

4. What costs should be allowable?

Research universities are not-for-profit corporations or quasi-governmental entities whose streams of revenue are narrowly targeted to the services they provide. Their mainstream missions of education and research are labor intensive and expensive. During the past three years, many major universities, public as well as private, have announced campaigns to trim administrative costs in response to budget gaps.

For these reasons, the answer to "What costs should be allowable?" is ALL actual costs necessary to perform the research. If the sponsor does not pay all the costs, then some other constituency served by the institution must pick

up the difference. It is an important fact that universities do not recover all their indirect costs at present. A survey completed in 1987 by Cornell University showed that under-recovery in 134 institutions amounted to more than $100 million per year in 1983 and 1984.

The issue that has surfaced so dramatically in the Energy and Commerce hearings is whether some costs that may be deemed allowable are in fact not regarded as publicly acceptable. We can wish that every accountant would exercise good judgment when faced with the allocation of delicate expenses, but in the final analysis the Office of Management and Budget is going to have to specify disallowable expenses as clearly as possible and live with the consequences. The A-21 regulations do contain such a specification, and it seems quite clear to me.

5. What positive incentives can be developed to encourage rigorous accountability and control of rising indirect costs at universities?

As the Pings Report states, the best way to contain indirect cost rates is to contain indirect costs. A major contributor to indirect costs is the federal government itself through burdensome legislation and regulation. Most of these burdens would appear to be irreversible in the short run, but Congress needs to be aware that it is costing its educational institutions enormous sums in a large array of mandates and requirements.

Simplification of the accounting methodology has been proposed in the Pings and the Packard/Bromley reports as an important way to reduce the contentiousness of the indirect cost process. It would also have the effect of making the process easier to manage and implement. Other recommendations in these reports include increasing the duration of contracts, increasing the discretion of investigators (not administrators) over direct cost funds, and elimination of cost-sharing requirements. The Packard/Bromley report also recommends that all federal agencies include the indirect costs in the project budget subject to peer review. This automatically involves the faculty investigators as allies to keep the indirect costs at competitive levels.

Some people believe that public universities have less incentive than private ones to keep costs down because state funds are available to close any budget gaps. I can only speak knowledgeably about the State of New York where a systematic tax reduction program over the past decade has put tremendous pressure on all state agencies to "do more with less". Despite targeted investment in research and graduate programs, budget reductions or less-than-inflationary increases have forced close attention to resource management.

Most states where the largest public research universities are located have reported enormous budget shortfalls for the current fiscal year. Nevertheless, the state contributions have made it possible for public universities to keep overhead rates lower on the average than in private institutions. The greatest differences appear to be in facilities costs.

Perhaps the greatest incentive currently operating to keep overhead expenses under control is that universities fail to recover all costs. Therefore, expansion even of reimbursable services always costs the institution something.

6. Recommendations for legislative or administrative changes that would improve the current indirect cost system and associated policies.

The most important step that could be taken quickly is for OMB to adopt recommendations of the Packard/Bromley and the Pings reports. These recommendations are practical and they have crystallized from a careful process in which representatives of all parties have participated. They strike a balance between the big issues of low public visibility like facilities, and the materially small but very visible issues of administrative costs.

Legislative action on accounting methodology and categories of allowed expense would seem to be wrongly placed. These are appropriate matters for the regulatory agencies, and despite difficulties, the current regulatory system works reasonably well.

Legislative action on programs that could alleviate the facilities burden on research universities are badly needed. The Packard/Bromley and GUIR reports have excellent suggestions for this area.

I seriously doubt whether any steps can be taken in the short run to save significant amounts of money by adjusting indirect cost policies. All the data I have seen indicate that a responsible approach to indirect costs will increase the cost to the government. The reluctance of federal agencies to pay the full costs of the research they sponsor has had a cumulative effect that is undermining the national research enterprise. Perhaps the worst spin-off of the current alarm about improper allocation of administrative costs is that it is distracting attention from this important problem. The research university community will respond to these concerns with alacrity because it feels threatened by a much larger issue to which I am sure your committee will be devoting much future effort: the state of the research infrastructure in higher education.

Mr. BOUCHER. Thank you very much, Dr. Marburger.

Professor Clardy, we'll be happy to hear from you.

Dr. CLARDY. I'd like to thank Representative Boucher and the subcommittee for the opportunity to present my views. I'd also—

Mr. BOUCHER. Could you move your microphone just a bit closer.

Dr. CLARDY. I'd also like to ask if the first two pages of my prepared statement could be reversed, they'll make more sense if page one is first.

Mr. BOUCHER. Without objection.

[Laughter.]

Dr. CLARDY. I'd also like to make some of my biases clear at the outset. For my entire career, I've been an active researcher and an educator. I'm temporarily an administrator.

For the last years, I've been Chairman of the Department of Chemistry at Cornell and in that role, I've had a crash course in indirect costs. There's no more corrosive element in the university research establishment today.

Indirect costs have alienated researchers from their universities and disrupted an extraordinarily productive partnership between universities and the Federal Government.

In the interests of time, I'd like to address only two points in my opening statement. One is the possibility of capping indirect costs—we've talked about—and the other is to comment on the increase in departmental administrative costs.

Capping indirect costs, or even imposing a uniform national indirect cost rate, is the immense appeal of seeming to establish a level playing field for all researchers. But capping indirect costs addresses only half the problem of research funding. The equally important question of carefully distinguishing between direct and indirect costs is overlooked in the rush to find a simple solution.

Until equitable norms for direct costs are established, capping indirect costs is an inadequate approach to half the problem. Let me give an example. In some universities, researchers are required to recover part of their academic year salaries from grants. Since these recovered salaries appear as direct costs, a university with mandatory salary recovery can have an artificially low indirect cost rate, but the real cost of a piece of research is not reduced. Is such a practice reasonable? I have no strong opinion on this point, but what I do feel strongly is universities and government, working together, should establish acceptable guidelines for salary recovery so that the systems used by different universities are comparable.

If indirect costs were to be capped in the absence of an agreed-upon division between direct and indirect costs, what is now an indirect cost at some universities would simply reappear as a direct cost. Cost of research would not be decreased and the playing field would be no more level.

For example, the computer that I now use is a shared facility supported in large part by the university via indirect cost recovery. Were indirect cost to be capped, I suspect that my computing would become a direct, not an indirect cost of research.

It won't be easy, given the incredible diversity of our universities to equably allocate direct and indirect costs, but I'm optimistic that the problem can be solved with intelligent effort. Once the direct

versus indirect allocation has been made, the issue of capping indirect cost elements can begin to be addressed.

The two most rapidly escalating components of indirect costs are buildings and departmental administrative costs. As Chairman, I've wrestled with good reasons for the latter and they're not difficult to see. When I started my academic career over 20 years ago, I had one grant to support my research. Every few years, I'd have to reapply for funding, but the assumption was that if I'd made reasonable progress, I'd be funded again.

Now I and my colleagues must have multiple grants to keep even a modest research program going. The size of a typical grant is simply not sufficient. The average professor in my department raises roughly $350,000 a year for research while the typical grant is in the 50- to $150,000 range. The average NSF grant will barely cover—will barely support the work of a professor and one graduate student at Cornell. They currently have support from three government agencies and one industrial source. Each grant has its own budgetary rules, yearly reports, assurances, overlapped statements and periodic reapplication.

When I joined the Cornell department in 1978, all of our grants were handled by one administrative officer. Now we have four over-worked people in our business office. Adding to the complexity of funding from multiple sources is the ever-increasing number of regulations. I spent one day last week working on animal care and welfare forms. Do I work with animals? No, but I am a principal investigator for a large NIH drug-development grant that has an industrial collaborator that does work with animals. The industrial partner receives no government funds, but their data are used in our work.

Because of this, I have to fill out animal welfare forms and appear before the relevant university committee to explain the protocols and make sure that the proper forms are filled—are filed with the government. Of course, the industrial partner has to fill out essentially the same forms with a different agency.

I don't object to these regulations. They're simply part of the way we live and work today, but they increase the cost of doing research. One of the problems that we're dealing with currently is the new OSHA regulations for chemical hygiene and safety in academic laboratories. I believe that these regulations will dramatically improve the atmosphere, both literally and figuratively, in which we work and I strongly support them, but we are now undertaking a $5 million building renovation and looking for a chemical hygiene officer to join the department. These actions will increase indirect costs.

I'm pessimistic about moderating these administrative costs. I don't foresee a future where grants will increase to the level where a single investigator can fund a viable research program with a single grant. I don't foresee a future where the probability of having a proposal funded would allow a researcher to rely on a single grant, and I don't see a future where the level of regulatory scrutiny is or should be reduced.

Thank you.

Mr. BOUCHER. Thank you, Professor Clardy, and Professor Schachman, we'll be happy to hear from you.

Dr. SCHACHMAN. Thank you very much, Mr. Chairman. I really appreciate this opportunity to express the views of some of the scientists in the biomedical community before this subcommittee because we've been very interested, as you can well imagine, in the problem of indirect support for government research, especially sponsored by the National Institutes of Health.

I've just come from the annual scientific meeting of the American Society for Biochemistry and Molecular Biology and the Federation of American Societies for Experimental Biology and I can assure you the subject was of intense interest during this annual meeting just now. In my role as former President of both of those organizations, I've spent a lot of time on this and had the pleasure and the usefulness of discussions with Dr. Pings and with Dr. Rosenzweig and the AAU with regard to this whole issue, but today I would like to testify as a working scientist who actually has been supported by government grants since the inception of NSF, so that I'm now talking about 40 years, essentially, worth of government support. I actually got ONR grants before the National Science Foundation was giving out money for support.

So I know the value of these systems and I have appreciated what a national treasure we have in these wonderful agencies which have done so much for the United States and the welfare of its people.

My detailed statement is available to you and it discusses some of the interests which most researchers have worried about for some years and about which there's been continuing tension between the scientists on the one hand and the university administrations on the other hand. Had these issues been discussed opening and candidly, had government policies under OMB Circular A-21 been made less confusing and more explicit and had university administrators recognized that some of their charges for indirect costs were inappropriate and unjustified, we would not have experienced the apparent abuses in reimbursement claims that have surfaced in the newspapers in the past few weeks.

We, of course, are in accord with the policies and specific lists of unallowable charges stipulated yesterday by OMB Director Darman, but feel very strongly that these guidelines and restraints do not go nearly far enough to clarify the issues. Most of the exclusions that he listed, it seems to me, were obvious beforehand and one doesn't need to rewrite OMB Circular A-21 just to do those, but we do think that there are a lot of issues which both we, as the working scientists, and university administrators would benefit from having clarified in A-21 and we hope that through these hearings that you've initiated, these matters can be brought to hand.

There are differing points of view. Obviously, the scientist, on the one hand, worries about the fact that indirect costs frequently are not seen to aid and abet their research and I agree with you, Mr. Boucher, very strongly that we are not in favor of discretionary funds being sent back to the individual investigator who received those funds. I know of no such policies myself in any institution. Of course, I'm at the University of California and that certainly doesn't happen there. We do think, however, that the indirect funds should be attached somewhat to aid and abet the research

for which the direct grants were awarded in the first place and that is one of our sources of major concern.

While agreeing extensively with many of the proposals in the—we call it the Pings report—the one of the AAU that Dr. Pings chaired, we do have some strong differences on two major issues and I'll talk about them as I go along. So I would like to make essentially six significant points.

One is that allowable indirect costs should be available for support for space, repair, maintenance of buildings. We feel strongly that the universities should receive those indirect costs and we're very much in favor of it. Although repairs and modernization of individual laboratories are needed continuously, most university laboratories have useful lifetimes far in excess of 20 years, and it was for that reason that we disagree strongly with the proposal in the AAU report that, in fact, you change the depreciation schedule so that it would be a 20-year lifetime, rather than the present one, which is mainly on the use allowance of 50 years, 2 percent per year.

In that regard, we think maintenance and repairs are important, but you should not use the indirect cost vehicle to fund new buildings. We think indirect costs should be used for maintenance and repair and the funding of new laboratories should be through direct competitive grants, just as in the NSF proposal that this committee must obviously have been involved with that started in January, 1991, where, in fact, you do fund laboratories by direct, competitive grants that would involve matching funds from private sources along with government services.

Now, my second major point is that a well-justified amount of administrative support should be reimbursed for accounting, personnel services, purchasing department, supervision of regulatory functions needed for requirements such as upgrading animal facilities and radiation safety. But many working scientists have the impression that funds for administrative support paid from indirect costs are much too high, and that was an issue that you, Mr. Boucher, raised earlier and Mr. Thornton raised. It's a subject that seems to us of considerable importance.

We think that in that one branch of indirect costs, there should be a cap. We are not in favor of a cap for total indirect costs, but we are in favor of a cap for those indirect costs that are charged directly to administration. We think the administrative growth has been so large that we begin to feel as working scientists that this is perhaps wasteful and therefore, we are in favor of a cap. I might point out that we recommended such a cap in 1986 in earlier deliberations on the subject.

My other major point was that construction of laboratories—and I've already mentioned this—for biomedical research should be funded by special competitive grants, rather than use the vehicle of indirect costs for this purpose.

Then I already alluded to the point that you raised that guidelines are needed so that a significant fraction of indirect costs accrued from grants are returned to the units responsible for raising those funds, rather than distributed all over the universities in ways that have nothing to do with the purposes for which the grant money was funded.

We've now reached another point of disagreement with Dr. Pings and the AAU—we're concerned about the growing tendency to shift charges that have historically been paid out of indirect costs into direct charges. Guidelines are clearly needed to clarify university responsibilities for services such as assuring environmental health and safety, accounting and monitoring the use of radioactive compounds. And when more and more of these services are charged to direct grants, even though money was already raised for the indirect charges, then the people who get the grants, such as Professor Clardy has just described, are going to be more and more bankrupt with regard to their ability to prolong the research for which the grant was funded.

My final point has to do with language. We find much of the language is the source of confusion and the source of contention between the scientists on the one hand and the administration on the other and we regret these tensions. We think it's much more important for us to work together and it is for that reason that I've had some extremely pleasant and useful, fruitful discussions with Dr. Rosenzweig, me representing scientific community on the one hand and him representing universities on the other.

We think the language, full-cost recovery, is a source of major tension. Professor Clardy has already referred to language—to salaries and of your study of the medical school situation. This committee doesn't deal with that extensively, but under NIH funding, you will find many professors, many professors with full-time professorial obligations funded 100 percent out of the direct costs and then the university collects indirect costs in the way it should collect indirect costs so the university obligation to that research activity financially is essentially zero, and we think this ought to be corrected.

To correct it would be a very difficult process and very costly because we already have that trend established and I'm in favor of doing that slowly so that we do not do harm to those medical schools that have already instituted such procedures.

Mr. Chairman, I think that summarizes most of the major points which I've tried to outline. Thank you very much for this opportunity.

[The prepared statement of Dr. Schachman follows:]

STATEMENT OF

Dr. Howard K. Schachman

Chairman, Public Affairs Committee

of the

American Society for Biochemistry and Molecular Biology

Department of Molecular and Cell Biology

University of California at Berkeley

before

The Subcommittee on Science

of the

Committee on Science, Space and Technology

U.S. House of Representatives

April 25, 1991

10:00 a.m.

Mr. Chairman and Members of the Subcommittee

Thank you for the opportunity to appear before your Subcommittee to discuss INDIRECT COSTS OF UNIVERSITY RESEARCH. I am Dr. Howard K. Schachman, Professor Emeritus in the Department of Molecular and Cell Biology at the University of California, Berkeley, and a recent Past President of the American Society for Biochemistry and Molecular Biology (ASBMB) and the Federation of American Societies for Experimental Biology (FASEB). At present I am Chairman of the Public Affairs Committee of ASBMB.

In testifying before you I want to emphasize that I have had research grants from both the National Institutes of Health and the National Science Foundation, as well as the American Cancer Society and the Office of Naval Research. These grants date back almost 40 years, and even today my laboratory group, composed of four undergraduate students, five graduate students, four postdoctoral fellows and one research associate, is supported by long-term grants from both the National Institutes of Health and the National Science Foundation. Hence my orientation in testifying before you is that of a working scientist who is supportive of the concept of indirect costs as an essential ingredient of the total funding of basic science by the United States government.

The subject of indirect costs of research is a difficult and often contentious issue. Indirect costs, or as it used to be called, "overhead", represent a major expense in the performance of biomedical research amounting now to about $1.7 billion dollars of the annual expenditure of the National Institutes of Health (NIH) alone. Because indirect costs consume so much of the total biomedical research funds, they are the source of considerable tension among faculty scientists and university administrators. ASBMB, which represents working research scientists in the biomedical field, is committed to facilitating the most effective conduct of research which will ultimately benefit the public through alleviation of suffering and the solution to health care problems that will in turn reduce costs to the nation.

Heretofore the public has known little about reimbursement of indirect costs of research. Recent, well-publicized revelations about alleged abuses concerning some specific indirect cost reimbursements have attracted much attention and brought the issue of indirect costs to the front pages of our newspapers in a spectacular way. These revelations have created a great deal of concern and led to understandable demands for accountability and, where appropriate, for reform. It is important that the needs for legitimate indirect costs be considered carefully in order to design appropriate procedures to assure accountability without adversely affecting the primary goal of biomedical research. We must decide what needs to be done and what changes are proper and prudent.

It is important for us to agree as to the nature of research costs. There are really two types -- direct and indirect. Direct costs are those that can be identified specifically with a particular sponsored project, and are directly chargeable to a specific grant. Funds may be used to pay salaries of the principal investigator, laboratory assistants, postdoctoral fellows, graduate students and, on occasion, undergraduate students who work in laboratories during the summer and thereby gain experience in research. The monies can also used for such goods and services

as chemicals and general supplies, instruments, specialized equipment, and travel to attend important scientific conferences to present results. Indirect costs are, according to OMB Circular A-21, those incurred for common or joint objectives which cannot be identified readily and specifically with a particular sponsored project. Such costs are normally classified at universities in one of seven indirect cost pools: depreciation and use allowances; operations and maintenance; libraries; or in one of the four administrative cost pools.

These costs usually include such items as maintenance of physical facilities, heat, light, janitorial services, libraries, secretaries, monitoring environmental health and safety regulations and providing radioactivity safety services and waste disposal, and the like. Among the most controversial charges are those for administration. These cover both those administrators directly involved in the support functions of the research as well as a portion of the time of university presidents, vice presidents, deans and others who, in part, work on management issues affecting the research, rather than the research itself. Their concerns are associated with record keeping, oversight, and so on. Indirect cost charges in this area probably are the most difficult to substantiate and are the cause of continuing friction between faculty and administrators.

Agencies differ in the way direct costs are funded. At NSF, the indirect costs are included with the direct costs as a total grant and thus the principal investigator who received a $100,000 award will receive only part of that money (about $65,000) for the actual research. In contrast, NIH funds the payments for indirect costs separately from those for direct costs although both payments come out of the appropriation made by NIH. Hence, if a university's indirect cost rate is 75%, this means that for each $100,000 of direct costs it receives from NIH (excluding equipment purchases and subcontracts larger than $25,000) the institution also receives $75,000 for overhead costs. NIH does not control how much institutions may claim for overhead reimbursement. Under present arrangements at most universities, this and other indirect cost policy decisions are the responsibility of the Department of Health and Human Services. Most of the remaining universities have their indirect cost procedures overseen by the Office of Naval Research, and one or two others negotiate these issues with the Department of Energy.

Indirect cost recovery at universities is covered by OMB Circular A-21, "Cost Principles for Educational Institutions." This contains a lengthy, but frequently vague, list of rules which define cost principles and cost allocation methods which universities use to allocate payments of both direct and indirect costs (a similar circular, A-122, covers indirect cost principles for non-profit research foundations and other non-universities which do research). Much of A-21 is subject to interpretation. In my view, an overly aggressive interpretation of what is allowable as an indirect cost has led at some universities to the more questionable billings to the government which have been the subject of recent news reports.

In the light of the recent revelations, OMB, NIH and the Inspector General at HHS have undertaken a full-scale review of the guidelines for indirect cost recovery in Circular A-21 and will make proposals in 30 to 45 days intended to resolve some of the controversial issues. There are also reports that some Members of Congress may seek to cap indirect cost reimbursement, in whole or in part. Other more

drastic proposals may be offered in Congress as legislators, angered by recent disclosures including apparent shortcomings in Federal controls, try to decide what to do in this highly complex area.

In the search for remedies, it is very important to keep in mind that reimbursement of legitimate indirect costs is a necessary part of biomedical research. We who work in research institutions could not be effective without electricity, hazardous waste disposal and working space any more than we could survive as research workers without test tubes, Bunsen burners, fume hoods and reagents.

This is not say that reforms are not needed in how indirect costs are computed and paid. On the contrary, OMB Circular A-21, for all its length and complexity, is subject to considerable negotiation, ambiguity and confusion and certainly needs clarification. But we must be careful not to impose such regulations in the system that the conduct of research is harmed. There is great danger that the remedy may be worse than the disease.

Thus, as a first step, Congress should develop answers to some major questions. Would strict limits on indirect cost payments help or hurt the conduct of scientific research? Is it desirable to set standard reimbursement rates for some or all cost pools for all research institutions? If so, how should these rates be determined? What steps could be taken to clarify and simplify A-21 and, if necessary, the parallel regulations for non-university recipients of research grants, while still maintaining efficient flexibility so as not to undermine biomedical research? How should the government contribute to the costs of construction of biomedical research laboratories in universities? Is it sound public policy for universities to use indirect cost recovery from research grants to build new facilities, especially when the construction decision undergoes no Federal review? How can the benefits of biomedical research to the public be maintained while still obtaining accountability within institutions? What are the university and medical school obligations for the support of research in their institutions? There are many such legitimate questions that must be considered by Congress.

In an effort to address these questions in a thoughtful and effective manner, we **propose that Congress charter a special commission to review the principles of indirect cost reimbursement and make recommendations for reform of the system. The purpose of the review would be to strengthen our knowledge of the subject and to effect needed reforms without inflicting damage to the progress of biomedical research.**

FASEB, of which ASBMB is a member, recommended such a commission during testimony on the NIH financial management plan last December, and in testimony last week before Mr. Waxman's Energy and Commerce Subcommittee on Health and the Environment. FASEB was pleased that NIH, after the December hearing, said it would propose the establishment of an indirect cost review group at a high level of the Federal government. Dr. Bernadine Healy, the new Director of NIH, said at her confirmation hearing that it was important for the NIH to become involved in the issue of indirect costs.

The commission should be composed of leading government officials, such as the Presidential Science Advisor Dr. Alan Bromley, Secretary of HHS Dr. Louis Sullivan, Dr. Healy, Director of the National Science Foundation Dr. Walter Massey, and key members of Congress with oversight responsibilities in the area of Federally-funded research. Other members should include working scientists, economists capable of elucidating the economic benefits of research to society, technical experts in indirect costs, and institutional administrators.

We also recommend that the review be completed expeditiously — in no more than six months. In addition, the panel should hold public hearings, obtain expert testimony and have access to all government documents bearing on the subject.

There can and should be no delay in initiating this process. A prompt and thorough airing of all aspects of research overhead costs and how they are reimbursed is long overdue. The review should be designed to provide Congress with an appropriate blueprint for action in time for consideration in this or the next budget cycle.

Our organization, as well as FASEB, have been considering these issues for some years and have developed a series of specific proposals which may contribute toward achieving the goals we all desire.

As a general principle, ASBMB recommends that indirect costs should be clearly related to and sufficient for the support of the projects for which the direct costs have been awarded. There should be proper accountability to assure linkage of the indirect costs to the supported research. Numerous instances can be cited where essentially none of the indirect costs are designated for the units that raised the funds through research grants. The degree to which some universities have used a significant portion of their indirect cost recovery for general support purposes not clearly related to research is a signal of the need for specifying in more detail in Circular A-21 what is a proper and allowable cost and what is not. This could be accomplished by clarifying A-21's definition of "reasonable cost," so that specific examples are given.

In any look at this subject, we suggest that the following issues may require particular attention:

1. Allowable facility support for research should include adequate space, power, and repair and maintenance of buildings. Reimbursement for building use and depreciation should be allowed, but how amortization is scheduled is a matter of considerable controversy. This issue was considered in a report issued in December 1988 by a task force of university administrators headed by Dr. Cornelius Pings, Provost of the University of Southern California. The report, entitled "Indirect Costs Associated with Federal Support of Research on University Campuses: Some Suggestions for Change", made 13 specific recommendations regarding changes in the indirect cost reimbursement system so as to make it simpler and easier to understand.

We are in agreement with some of their recommendations, but on one major issue we differ. It is our view that the recommendation of the Pings report to the Association of American Universities that use allowances be based on a twenty-year useful life for all buildings is not reasonable. Although repairs and modernization

of individual laboratories are needed continuously, most university laboratories have useful lifetimes far in excess of 20 years. To be sure, some figure less than the current fifty-year life for newly constructed buildings may be appropriate for amortization purposes. It is important that the maintenance of departmental infrastructure necessary for the conduct of research, such as shared equipment and laboratory space, must be covered through indirect costs.

2. Indirect costs should also be allowed for directly assignable university support for central services, such as libraries and selected other resources that are necessary for the conduct of research.

3. A well-justified amount of administrative support should be reimbursed for accounting, personnel services, purchasing department and the supervision of regulatory functions needed for such requirements as upgrading animal facilities and radiation safety. It should also be noted that some (but not all) increases in indirect costs have resulted from the imposition of new regulations such as the requirements for upgrading of animal facilities and other mandates which must be implemented. In addition, animal rights terrorism has required large expenditures for increased security to protect animal research projects.

But these administrative expenses aside, many working scientists have the impression that funds for administrative support paid from indirect costs are much too high. In their view, which I think has some merit, a hierarchy of top level management staff has arisen which has led to unreasonable charges. Thus, some reasonable cap on the administrative cost pools in the indirect cost system is something to consider carefully; it may serve as a restraint on unwarranted growth in this area.

4. A review of the language "full cost recovery" is essential to clarify both the universities' responsibilities and the government's obligations. Some universities, and especially medical schools, use the concept of full cost recovery to such an extent that regular full-time faculty have their salaries charged 100% to their research grants (direct costs) along with the other direct expenses of the actual research; and their indirect cost reimbursements are billed for other services. This abdication of any financial responsibility by the institutions is justified by them under the guise of "full cost recovery" since the individuals are engaged in research. In other institutions where faculty receive support for their research from NSF or NIH, the grants include funds for only the summer salary of the Principal Investigator. In these cases the universities are indeed assuming a proper obligation for support of their faculty in both teaching and research. If this practice of full funding of salaries of regular faculty members from research grants is to be revised, it must be done gradually so as to allow institutions to develop appropriate procedures and financial resources.

5. Construction of laboratories for biomedical research should be funded by special competitive grants explicitly designated for that purpose. These facility grants for which matching funds or cost sharing may be required would be analogous to the awards under NSF's Academic Research Facilities Modernization Program announced in January 1991. This approach to the modernization and construction of new laboratories is far more equitable and

open than using indirect costs through greatly enhanced use allowances to recoup funds that are then used for new construction.

6. Special guidelines are needed so that a significant fraction of the indirect costs accrued from grants is returned to the units responsible for raising the funds. In some universities a large fraction of the indirect costs associated with individual grants are returned to the department for use by the principal investigators. Other institutions differ considerably in the disbursement of funds from indirect costs with the result that the unit responsible for raising those funds often receives virtually none of the funds. It can be argued, of course, that in these latter cases the indirect costs are used for maintenance and general administration costs. This variation can be found among different units on the same campus as well as among different campuses of the same university. Some uniformity is needed along with the development of explicit policies so that some of the funds from indirect costs are allocated for the direct support of the units receiving federal grants.

7. We are concerned about the growing tendency to shift charges that have historically been paid out of indirect costs into direct charges. Guidelines are needed to clarify university responsibilities for services such as assuring environmental health and safety, accounting, and monitoring the use of radioactive compounds. These services should not be charged to direct costs but instead must be provided by funds from the indirect cost allotment to the institution. Otherwise, such a shift could be used merely to camouflage indirect costs by labeling them as direct costs.

Whatever methods the Federal government adopts for responsible reimbursement of indirect costs of doing research, their effective implementation depends a great deal on the good faith of institutional officials, and the government officials who work with them, to ensure that the government's generous support of research is effectively utilized for science with full accountability. We welcome a well-designed system that clearly delineates what universities should assign and charge to indirect costs and provides for appropriate government oversight. Thus, it seems to us that any reforms should address both reimbursable costs, the precise utilization of such funds, and include a review of enforcement provisions, with a view to how compliance can be assured.

Thank you for the opportunity to present these remarks, Mr. Boucher, and I would be happy to respond to any questions you may have.

Curriculum Vitae

HOWARD K. SCHACHMAN

Professor of Molecular Biology and of Biochemistry, and Research Biochemist to the Virus Laboratory (Chairman of the Department of Molecular Biology and Director of the Virus Laboratory 1969-1976). Born: Philadelphia, Pennsylvania, 1918. B.S., Chemical Engineering, Massachusetts Institute of Technology, 1939. Ph.D., Physical Chemistry, Princeton University, 1948. Naval Medical Research Institute, Bethesda, Maryland, 1945-47. Research Fellow, National Institutes of Health at Rockefeller Institute, Princeton, New Jersey, 1947-48. University of California, 1948-- . Guggenheim Fellow, Department of Microbiology, Washington University School of Medicine, St. Louis, 1957-58. California Section Award, American Chemical Society, 1958. E. H. Sargent & Co. Award for Chemical Instrumentation, American Chemical Society, 1962. John Scott Award of the City of Philadelphia, 1964. Warren Triennial Prize of the Massachusetts General Hospital, 1965. American Academy of Arts and Sciences, 1966. Riley Lecturer, Notre Dame University, 1967. National Academy of Sciences, 1968. National Sigma Xi Lecturer, 1969. Harvey Lecturer, 1972. Doctor of Science (Honorary), Northwestern University, 1974. Carter–Wallace Lecturer, Princeton University, 1976. Gardiner Memorial Lecturer, New Mexico State University, 1976. Jesse W. Beams Memorial Lecturer, University of Virginia, 1978. Scholar-in-residence, Fogarty International Center, National Institutes of Health, 1977-78, 1982, 1983. American Society of Biological Chemists — Merck Award, 1986. Bernard Axelrod Lecturer, Purdue University, 1986. Behring Diagnostics Lecturer, University of California, San Diego, 1987. Alberta Heritage Foundation Lecturer, University of Alberta, 1987. President, American Society for Biochemistry and Molecular Biology, 1987-88. William Lloyd Evans Award Lecturer, Ohio State University, 1988. President, Federation of American Societies for Experimental Biology, 1988-89. Scientific Council and Scientific Advisory Board of the Stazione Zoologica, 1988--. Board of Scientific Consultants of the Memorial Sloan-Kettering Cancer Center, 1988--. Board of Scientific Counselors, NCI, Division of Cancer Biology and Diagnosis, 1989--. Chairman, Public Affairs Committee, American Society of Biochemistry and Molecular Biology, 1989--. Chairman, Biochemistry Section, National Academy of Sciences, 1990--. Member, Scientific Advisory Committee of Research!America, 1990--. Doctor of Medicine (Honorary), University of Naples, 1990. Member, NAS Panel on Scientific Responsibility and the Conduct of Research, 1990--.

Mr. BOUCHER. Thank you, Professor Schachman, and the Chair's thanks to all of the witnesses for sharing their views with us here today.

I was interested to hear Professor Schachman indicate that from the vantage point of the researcher having a fixed rate for administrative costs would make sense and would be supported. I wonder what the other two witnesses would have to say about that proposal which we heard from the first panel from both Mr. Packard and Dr. Pings?

Dr. Marburger, your response, please.

Dr. MARBURGER. The idea of capping or thresholding the administrative portion of indirect cost is one that has been advanced in both the Packard-Bromley reports and the Pings reports, and I think that there's a good deal of agreement that that process would be very helpful in reducing the contentiousness of the indirect cost process and may actually contain costs as well.

I am concerned, of course, about the level of the cap. The perception that the administrative portion of indirect costs is much too high, for example, is one that can be checked. We need to know what the experience is, what the auditors think, because, after all, we don't charge the Federal Government for anything that isn't confirmed as an actual expense through an auditable process and I think that we should not speculate on whether, in fact, these costs have an adequate basis. We should actually go out there and look.

Mr. BOUCHER. Professor Clardy.

Dr. CLARDY. I would have no problems with having administrative costs capped at a reasonable level and my colleagues would be delighted.

Mr. BOUCHER. Let me be sure that we're all talking about the same approach. For purposes of defining administrative costs, would you agree that we would include in that category general administration expenses, the salaries of administrators and their administrative costs, departmental administration, sponsored programs administration, libraries and student services and then other odds and ends such as light, heat, insurance and the like, all of those items would fall within the category of administrative costs for purposes of this fixed rate.

Dr. Marburger.

Dr. MARBURGER. I—no, I would not include all those things in the category to be capped or to use the words of the AAU report, thresholded—if that's a word.

Mr. BOUCHER. Which of those items would you not include?

Dr. MARBURGER. I would not include the—I want to be careful because they are well-defined cost categories that have been established by OMB which are fairly clear on this and I think the AAU report is probably clearer than I will be, so with that caveat, I would exclude from that category all the facilities-related things and the library expense, for example, is one that is very variable among institutions, depending upon the types of collections that are necessary to sustain for their research.

I would tend to define the administrative costs rather narrowly to the administrative components of the indirect cost rate as it's assembled by the OMB. Not to put all operating costs in.

The reason being that there's—there just isn't as much controversy about how much it costs to heat a square foot of laboratory space as there is over whether this or that particular administrative activity is actually necessary for the conduct of research. That's where there's legitimate grounds for difference of opinion. Is this service necessary to carry out the research function? That's a legitimate question and I think it will be answered differently in different institutions and only a certain amount of latitude should be set for covering those costs.

That's the category where there's discretion in the type of management that you're going to provide, the type of support service you're going to provide. I would put all those somewhat discretionary management-sensitive issues in the administrative costs pool to be capped.

Mr. BOUCHER. I had read the recommendations of the Packard-Bromley report to suggest that the administrative category should be as broad as I originally had indicated and I see you nodding, so I assume you would agree that that was the recommendation.

I gather, then, from your answer, that you would differ with the Packard-Bromley recommendation as to what would be in the general administrative category to have a fixed rate applied?

Dr. MARBURGER. Yes, I think the approach of the AAU report is a refinement on Packard-Bromley and frankly I would prefer, if changes were to be made, I would prefer that we go with the AAU report and recommendations, perhaps with further negotiations with OMB or discussions about this further refinements.

Mr. BOUCHER. As I understand the AAU recommendation, there was not really a difference in the definition of the administrative cost category. I think both sets of recommendations would assign this general list of expenses I identified to the administrative cost category. The difference in the recommendation, and correct me if I'm wrong in this, is that the AAU report would allow the university to bill up from the fixed rate if it can justify those additional charges within the administrative category. Is that correct?

Dr. MARBURGER. I think that's true. I thought there was a little bit more differentiation among the different categories of things that would and would not be covered by the thresholds, but I could be wrong.

Mr. BOUCHER. All right.

Professor Clardy?

Dr. CLARDY. I would also tend to exclude things like facilities costs because, as pointed out, those are easily documentable. If there were a cap, I think those should be excluded. If one were talking about a threshold, as in the AAU report, then I don't have any problems with all of those being administrative costs.

Mr. BOUCHER. Which approach do you prefer? Do you prefer the fixed rate that would apply to all administrative costs or do you prefer the flexibility that the AAU report—

Dr. CLARDY. I actually personally prefer the flexibility of the AAU report.

Mr. BOUCHER. Professor Schachman?

Dr. SCHACHMAN. I certainly agree with the idea that there ought to be a flexible arrangement, but that I would restrict the cap specifically to administrative costs.

Mr. BOUCHER. Well, let me ask you this: If we go with the fixed rate and then allow the university to still come back to the contracting agencies, auditing agencies and say, we think that our costs are actually higher and here are the documents to demonstrate that, aren't we kind of in a sense coming right back to where we are? I mean, what problem have we solved if we set the fixed rate and then say, but if universities can show that their costs are higher, they can bill for those?

Dr. SCHACHMAN. I think they're going to have to justify them, and that—

Mr. BOUCHER. Well, they're supposed to today. That's been the source of the problem.

Dr. SCHACHMAN. I think that's going to require auditing that is much more stringent than has been true in the past and I think it will require a little bit more specification in A-21 to make sure that we can define those costs in a way that the ambiguity is removed. When the people who have been arguing that what they did was not illegal, that was certainly true. It was not illegal, but we worry about appropriateness and prudence and those are the kinds of things which obviously have to be addressed.

Part of our troubles are because the government rules were very, very vague and misleading, confusing and we would love to avoid that.

Mr. BOUCHER. Well, we certainly eliminate the vagueness if we have a fixed rate for administrative costs. Mr. Packard has argued very strongly, and I might say, somewhat convincingly for that. That does promote simplicity; it certainly would remove any ambiguity that exists within the current system and I wonder if that were to be implemented, whether that would be a regime under which you could live.

Dr. Marburger, would you have serious problems with it?

Dr. MARBURGER. The answer is yes,[2] if the caps are sufficient to cover the expenses that you really do need to incur and that's going to be a difficult negotiation, but there are real expenses. We're not recovering everything. There are requirements for matching, for example:

One of the—if I may be permitted to add a point here, one of the recommendations of the Packard-Bromley report that has not been explicitly mentioned here today was that the requirement of cost-sharing by agencies be eliminated because it's the requirement of cost-sharing that takes a large part of the potential reimbursement right off the top before we even begin and it puts us behind the 8-ball so that there's an incentive really to try to squeeze every drop out of this thing and that's why I think Mr. Packard had recommended so strongly, both here and in the report, that some of these recommendations need to be adopted as a package. If you do one thing and not the other, you're still going to be in trouble.

It's the rather delicate balance of means of compensation, so the answer's yes. Caps, we can live with caps as long as they can be made to work for the actual—for the expenses that you actually need to incur.

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[2]The answer, "yes," is to the question whether one could live with CARS.

Mr. BOUCHER. Would you care to add to that, Mr. Clardy?

Dr. CLARDY. I think as long as the agreement that the government will be reimbursing the university for the full cost of research, I think we could live with caps, thresholds—we could live with anything.

Mr. BOUCHER. Okay.

One of the other proposals that has been made—I think this panel is particularly well-qualified to respond to, and that is that instead of having indirect costs considered at all at the Federal level, we simply send direct research funds to the principal investigator and then the principal investigator, in his discussions with the university, could reach agreement as to what portion of the money he receives from the Federal agency would go to the university for its general costs; that's overhead costs. Now, others have commented that such a system might produce unbearable tension between the principal investigator and the university and that perhaps an unfair difference in influence exists between the university and the principal investigator who depends on the university for salary, for tenure, for so many other things, and that, therefore, the university might be in a uniquely advantageous position with respect to that negotiation.

I wonder if the three of you would comment generally on that subject and advise us as to whether this would be a workable system from your respective vantage points.

professor Schachman, let's begin with—

Dr. SCHACHMAN. I would start by saying it would be a preposterous system. I think the universities would suffer enormously and we need the universities, just as the universities need its working scientists. It's, in my opinion, an extremely foolish suggestion which won't go anywhere because it will create innumerable levels of chaos and, as you said, the tension would be unbearable.

Mr. BOUCHER. Okay.

Professor Clardy.

Dr. CLARDY. Yes, I think in its extreme form, it's a ridiculous suggestion. I do like the idea put forth in the Pings report that more costs be direct costs, rather than indirect costs, but to use a simple example from some of Professor Schachman's earlier testimony on chemical waste disposal, if you make that a direct cost, that you're going to charge an individual researcher for properly disposing of chemicals, you put the temptation in someone's mind to sort of illegally dispose of chemicals rather than properly disposing of them.

You could maximize the local situation, and I think it's just wrong to make things like that direct costs.

Mr. BOUCHER. Dr. Marburger?

Dr. MARBURGER. Yes, I had two comments on that. The first one is that the proposals that are currently on the table from the Packard-Bromley and the AAU reports have two recommendations that actually go in this direction. The one from the Packard-Bromley report is that all agencies adopt the method of including the indirect costs expense of a grant in with the direct cost expense as it's reviewed by the peer review panels, so that the panels are conscious of the costs, the total costs in research.

This automatically enlists faculty in efforts to keep the indirect cost portion down, putting pressure on administrators and so on because they don't want their grant to appear to be noncompetitive because of the high indirect cost component.

The other recommendation is that—that's in the AAU report is to increase the amount to the extent possible of services that are put in the direct expenditure part of the grant and I do think that's appropriate. It does—once again, it gives the investigator a little bit more control over the expenditure funds for those services.

In general, however, I would have to agree with the other panelists about the—the unwise nature—the recommendation to have all costs.[3] You would just have too many cooks. There would be too many bosses determining personnel policy and purchasing policy and so on. It just wouldn't work.

Mr. BOUCHER. Sounds to me like we can finally put that recommendation aside.

Another recommendation that we've received is designed to make sure that, to the extent the university receives indirect cost reimbursements attributable to facility use, depreciation, depending on the accounting standard, that that money actually be reinvested in upgrading the research facilities.

Would there be any wisdom in having a Federal requirement, whether by statute or by agency order, that would require that all money received by the university through that component of indirect cost reimbursement be, in fact, dedicated to facility upgrading?

Dr. Marburger?

Dr. MARBURGER. I would be opposed to further constraints on how money that was reimbursed to institutions be spent. I think that would lead to an accounting difficulty and reduce the flexibilities that universities ought to have over application of their funds.

That's my first reaction to that proposal. The way different institutions, especially between public and private sectors, handle their facilities is really quite different and I think that a recommendation in that area would have to receive much further study before it could be implemented.

Mr. BOUCHER. Professor Clardy.

Dr. CLARDY. My initial reaction is to be in favor of such a requirement, because I think one of the things that's happened is that universities have compensated for the under-recovery of their real research costs by letting the physical plant run down.

Mr. BOUCHER. Very revealing.

Professor Schachman.

Dr. SCHACHMAN. I'm very much in favor of that idea. I've often said that we ought to put the money in escrow to make sure that it would be used for the purposes for which it was assigned in the indirect cost negotiations with the Federal Government and our feeling is in many, many cases that has not happened, and therefore, that money is not available when, in fact, you need to modernize and improve the facilities.

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[3] "Costs" here refers to *direct* costs.

So I'm very much in favor of that and we've used the language of escrow accounts.

Mr. BOUCHER. The Chair thanks these gentleman. The Chair's time has expired and I recognize now the gentleman from Maryland, Mr. Gilchrest.

Mr. GILCHREST. Thank you, Mr. Chairman.

Well, I thought we had this problem solved with the other panel, so I was getting ready to leave. Now we come in and I'm a little bit more confused.

I guess I recognize the fact that an educational facility is quite a unique place in that one facility is certainly quite often vastly different from another facility and the way they do things are—if you restrain them and over-burden them with legislation and bureaucracy and rules and caps, then you don't have that creative energy that Dr. Packard was talking about that existed for so many years.

So I'm not exactly sure what I want to do now as far as caps or what's more—where does the burden lie—the administrative costs or infrastructure costs or things of that nature. So I guess what Dr. Pings said, we need a little bit more further study to analyze what is best to do and the recommendation of Dr. Johnson saying that we really don't need any more legislation because that's restrictive—so I suppose it can be restrictive, I guess, if it's not creatively done or allowing a certain amount of flexibility with each institution. And I guess, not to oversimplify this, but if each of you could give us your general recommendation, how we can proceed from here, should there be some legislation that offers flexibility? Do we need simply to allow each institution to govern what it thinks is best for that particular institution? Can there be networking between the various facilities to provide for what is—you know, really necessary?

I think, Dr. Marburger, you said in your testimony that expenses simply exceeds revenue and so we need to focus on how to correct that particular problem. So I guess just a thought on that rather rambling statement, so I can be at ease. Professor Clardy, I hope that your optimism exceeds your pessimism for whatever happens in the future, and Professor Schachman, I would really not want to be one of your students because I couldn't take notes fast enough. You were moving quite—at a pretty rapid rate and I know you wanted to say a great deal, but just a thought, I guess, on that statement.

Dr. MARBURGER. I believe that there are good recommendations on the table on which there's a fairly widespread agreement within the academic community. They've been on the table for several years and OMB does have it within its power to act, to modify its regulations, to take into account some of those recommendations. Budget officials themselves have participated in discussions that have led to some of these recommendations. It's just time to get them going.

If there's anything good that can come out of these recent disclosures about inappropriate charges and so on, it will be to put pressure on OMB to get its act together and put some of these changes into effect.

I was very pleased to see the list of additional unallowable expenses that was released just yesterday or the day before, but that

is not enough. There really do have to be some fundamental changes here and I think that in this case, Congress can do what it does best, which is to identify problems in government, shine a light on them, just insist that government, various branches of government be responsible. I'm not sure that what the legislature does best is always to legislate and one should be very cautious about adding a legislative solution to this.

The problem with legislative solutions is that they tend to breed more regulation in unexpected directions, and I think we need—the history of regulation in this area is particularly dense and we just need to be careful about adding more.

Dr. CLARDY. I agree that there are a number of very useful suggestions on the table. The main concern that I have is that we're looking at really only half the problem; that is, all these recommendations seem to be dealing with indirect costs and it doesn't seem to me that we've agreed what's an indirect cost, what's a direct cost. So to pick a very small point, maybe, that we've talked abut chemical waste disposal. Harvard, that's a direct cost. MIT, it's an indirect cost. At Cornell, if it's a radioactive chemical, it's a direct cost; if it's not radioactive, it's an indirect cost. None of this makes any sense.

We ought to agree first what's a direct and what's an indirect cost and then we can talk about rationalizing the system. I don't think we need a legislative approach to do that, but I think we need—we need effort to get things straightened out so that we're all doing the same thing more or less.

Dr. SCHACHMAN. Mr. Gilchrest, I'm not sympathetic to a legislative solution to this problem, but in my written statement, we recommended the appointment of a special commission with a target date of six months to investigate this problem and to come up with proposals for reform of the system and clarification of the system. We recommended that the commission include Members of the Congress, of this subcommittee, include Dr. Healy, Dr. Massey and Dr. Bromley. It would include, as well, university presidents and working scientists, along with economists who know a great deal about cost analysis.

We think that that commission in a six-month period could easily describe the kinds of reforms that are needed and the clarifications. I think much of our trouble is the vagueness that exists at A-21 and, therefore, the random interpretations that have developed from it.

So I think we don't need legislation. I think we need definition and definition could come from a very concerted effort on the part of a very responsible group specifically devoted for solving these problems.

Mr. GILCHREST. Thank you, gentlemen. Thank you very much.

Thank you, Mr. Chairman.

Mr. BOUCHER. The Chair thanks the gentleman.

The gentleman from Illinois, Mr. Fawell.

Mr. FAWELL. Thank you, Mr. Chairman.

I apologize for not being here earlier and missing the previous panel. The one area in regard to which I have an interest, and the chairman did make some reference, some reference to it, was in regard to the facilities cost and the hearing we had the other day. I

was able to propound some questions in regard to depreciation or perhaps with public entities, it's called use of real estate, which comes close to rental, it seems to me.

But if we're trying to define indirect costs, I think we all agree, perhaps not, that there has to be an actual expense incurred, and knowing—having—I've practiced law for a number of years before starting my third career here in Congress and we all know that there is depreciation, which is obviously an expense for putting capital costs—spreading it over a number of years. And in the first hearing, I asked a gentleman, the president of, I think, Renselear, I forget the full name, but the university, and asked the question if you charge the taxpayers for depreciation, are you, then, taking whatever the money may be—let's say it's $10,000 and you're putting it in a reserve account, which admittedly most business people don't do, either, and they ought to do it. We see it constantly in Congress, where we give grants for operating—for certain operation—low-income housing is an example where hard-pressed people don't do anything about the reserve and then all of a sudden the infrastructure is about to fall down and they came back to the Federal Government and ask about this.

His answer was no, we don't put anything in reserve at all. And the chairman, I think, brought this point up. Well, should there not be a requirement in that regard because I know we consistently hear about the science infrastructure at our higher education institutions not being all they ought to be and the inference, and more than the inference, I think, is the fact that the taxpayer ought to come in and rescue a number of higher educational institutions as a result of that.

So my feeling—this is only a lay reaction, really, and not with a great deal of review, is that we ought to rethink whether or not there should be any right to depreciation at all. I know that it's classified as reimbursing for expenses, but I don't think it is. It's a grant; it's a contribution from the taxpayers, and if I made a contribution, say, of $100,000 for a research project at Smith Hall at X College, all of that depreciation would be going on with or without it and anyway, none of the funds that would have been marked for depreciation would have ever been spent for any type of use for the infrastructure.

You wouldn't think of saying to me, well, we appreciate the $100,000, but can you give us another $24,000 so that we can cover our depreciation? Well, of course, you wouldn't think about that, but it's somehow standard practice, apparently, insofar as the Federal Government is concerned.

So my question is, is it reasonable that there are—ought to even be a depreciation charge, considering the fact that we have such a big problem with having available funds or, if there should be, should there not then be an absolute requirement that that's going to be placed in a reserve now, which is like a trust fund, which indeed is then earmarked for rebuilding our science infrastructure?

Dr. SCHACHMAN. I'm very sympathetic to your remarks. Some institutions use only use allowance, rather than depreciation and the principle there is to—essentially a rental charge—and the use—the money that would be brought in equivalent to the depreciation one. The normal use allowance allowed by OMB is 2 percent, so it's a

50-year lifetime and that is the part that Dr. Pings and his committee had objected to. They wanted that rate changed so that it was essentially 5 percent per year, which meant a 20-year lifetime and that's the argument that we have raised in opposition to that position.

So I have no strong feelings against using the phrase depreciation allowance as contrasted to use allowance, but I do feel that the money that is raised—saved—that way through indirect costs be devoted, as you said, for the purposes of the maintenance of the building for which it was assigned in the first place.

Mr. FAWELL. May I say that if you use it as a use allowance, that is to say you call it rent—

Dr. SCHACHMAN. Right.

Mr. FAWELL. —you still have an expense that you have not incurred. And that, I think, is a cardinal aspect of any type of a Federal grant that it should be an actual cost that you're going to incur. And it's especially true, I guess, in regard to a facility where you're going to be heating it and lighting it and you've got a depreciation account that's going to be there anyway. So I would think the only way to justify what you call a use account, a rental account or a depreciation account, is to say, well, all right, if we're going to do that, in order to show that there's an actual incurring of an expense, then there's an irrevocable trust you put it in a reserve and that must be used, therefore, for infrastructure—capital improvements. And the same would go with equipment, I suppose, that you may have.

I don't know if we charge for—

Dr. SCHACHMAN. Yes.

Mr. FAWELL. —equipment. I suppose you do if you have a nuclear reactor or something like that. There, again, and that—and I don't—I suppose it all takes into account if you happen to have capital assets which were paid for by the Federal Government. I don't know if anybody gets reimbursed for something they didn't pay for, and I suppose not. I think that must be worked out.

Dr. MARBURGER. I'd like to comment on that. Building expenses are real expenses and depreciation has long been recognized by accountants and administrators as an actual expense of doing business. It was one of the important categories that Mr. Packard mentioned in the financial structure of a corporation.

There's a lot of language in OMB regulation Circular A-21 about buildings and facilities and depreciation and usages that informs this debate. My—my feeling about this is that the university does not, in fact, recover all of the expenses for—there're very large amounts of money involved, for example, in cost-sharing. Now, suppose that by virtue of cost-sharing, you don't recover all of your expenses. Which expenses are you going to pay for from the money that you do recover? I believe it is true that institutions tend to pay for their operating expenses first and for capital-related expenses later, deferred maintenance and so on, that is the case. There's a certain amount of urgency so you use the funds that you have available first for the things that are ongoing operating expenses. And you find other institutional resources to—to handle the construction.

Some institutions, and Stanford is one of them, do make explicit agreements on over—on the indirect cost—in the indirect cost negotiations that support the construction of new facilities. That is, I think, an appropriate mechanism. It's done in a special negotiation and it's—would not necessarily be covered by the regulations that we're talking about here today.

But I just want to emphasize that, number one, facilities expenses are real expenses. Depreciation is not a fiction. There's something very real happening there. If I were an accountant, I'm sure I would be able to explain it better.

But number two, there is a—universities must have a choice on how they spend their cash. There's a cash flow aspect to this and if—if a regulation is not done carefully, there's a possibility that cash—that restrictions will be based on the management of cash within institutions that would be deleterious.

Mr. FAWELL. May I just suggest this, that it would seem to me that it is not a real expense. We all are acquainted with it, but unless one truly puts that into a reserve account, or I should say, unless there's an actual incurring of an expense, the depreciation represents a previous expenditure which is being amortized—

Dr. MARBURGER. Correct.

Mr. FAWELL. —over a number of years—

Dr. MARBURGER. That's correct.

Mr. FAWELL. —with or without that grant. The building is there. It may be 160 years old and the only depreciation that is even left is what capital improvements have not been amortized out. It loses, I think, all plausibility—if you're talking about Federal grants or you're talking about any contribution. Under the circumstances as we face, as we look at Cornell or at X college or whatever college we're talking about, what expenses are you going to have?

Well, if you're a very wealthy university, you know, maybe you don't even have a mortgage there on that building. And it—you're going to get—you're going to receive, let us say, the $10,000 and you're gong to be able to use it in any way that you want to see fit. It isn't going to be used for the purposes for which it is appropriated, to wit, the research project.

The only way you can hook it up, and its indirect because it would save you from using other funds of the university put in that reserve account, as you probably should but couldn't—the only way we could possibly hook it up and show an actual expense, which I think is a cardinal part of determining whether a grant—taxpayers' money should be given is by the use of a trust fund to say, well, we know it's going to go into the science infrastructure at X, Y, Z University.

But otherwise, I would respectfully say I don't think that it's a real expense that you're going to have to incur as a result of the fact that we're giving a contribution for a research project to take place at your university.

Somebody can undo that logic, which probably isn't too difficult but that's—

Dr. MARBURGER. I personally feel it's a technical question that I'm not competent to answer. I'm very conscious of the reality of expenses associated with building and replacing buildings. They are very real expenses and we're talking about buildings that we

would not ordinarily build were it not for our anticipation that we would accept some responsibility for carrying out this nation's research enterprise.

We don't build these buildings to educate students. Education is an important—perhaps the most important component of the university's missions, but we don't need to build some of these facilities in order to carry out that mission. We do need to build them in order to cooperate with the Federal Government to get this research done.

And we have to—this is what the partnership is all about. We have to work together to find a way to fund these buildings, and so I'm—I have to confess to a certain amount of technical ignorance on—on exactly how depreciation is done. It is a technical subject for accountants. There are lots of accountants in OMB who do understand this, but I don't.

Mr. FAWELL. Professor Clardy, do you have any—

Dr. CLARDY. I have nothing to add—

Mr. FAWELL. —thing—clarity, to put on this?

[Laughter.]

Dr. CLARDY. No. Thank you. I think I've said it all and I'd like to pursue it more and I do want to pursue it with OMB in some erudite account, CPAs and so forth. I think at least it's something that I've been thinking about a great deal the last couple of days and my druthers at this point would be that unless it goes into a trust account, reserve account, I, for one, would not be in favor of including that in the indirect costs. That makes it a lot more simple.

Dr. SCHACHMAN. My position, of course, is totally in accord with the view you're expressing and that's why I've argued that it ought to be a figure of about 2 percent per year and not used as a device for making—constructing new buildings. I think the construction of new buildings ought to come through a direct, open, competitive grant system through the United States Government, whether it's the NSF or the NIH, and there be matching funds, rather than use such a high depreciation schedule that, in fact, the money accrued through that route would then in turn be used to build a new building.

So I'm totally sympathetic with the idea that when one depreciates or uses the use allowance, one uses that money essentially in escrow for the maintenance of the building which you're talking about.

Mr. FAWELL. Thank you.

Thank you, Mr. Chairman.

Mr. BOUCHER. The Chair thanks the gentleman and expresses thanks once again to this panel of witnesses for their very illuminating testimony this afternoon. All of the thoughts and suggestions that you have shared with us, we will consider carefully as we continue our review of this intriguing, challenging and very important subject.

There being nothing further before the subcommittee today, this hearing stands adjourned.

[Whereupon, at 1:05 p.m., the subcommittee was adjourned, to reconvene subject to the call of the Chair.]

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